

Public Utilities



Volume 61 No. 6

March 13, 1958

OHIO BELL'S COMMUNITY LIVING PROGRAM

By John J. Joseph

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A Lesson in Limiting Governmental Intervention

By John D. Garwood

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Desalting Could Be Just Around a Corner

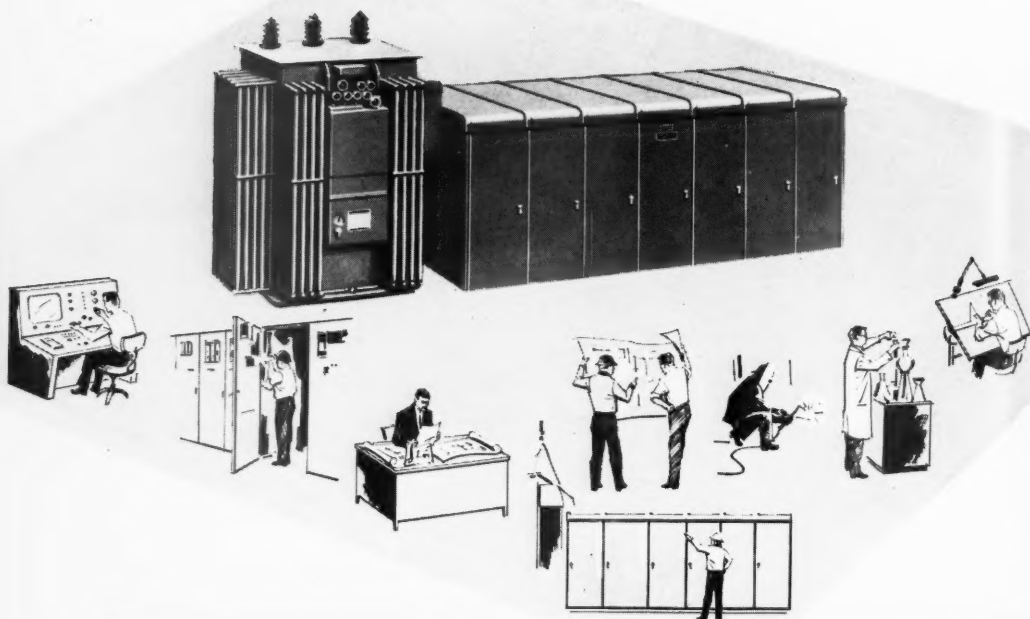
By James H. Collins

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Tax Benefits under Accelerated Amortization



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THE SUBSTATION-ORIENTED SKILLS of up to 35 technical experts are included in the purchase price when you buy substations as factory-built units. You get the skills of these people . . .

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Public Utilities

FORTNIGHTLY

VOLUME 61

MARCH 13, 1958

NUMBER 6



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High Availability of B&W Boiler Brings MORE LOW-COST POWER

"Excellent availability and performance." After two years of operation, this is the report on the B&W Radiant Boiler purchased by the Southern Indiana Gas & Electric Company. The unit is on the line at the Culley Station near Evansville, where it provides more low-cost power for the growing area.

One major reason for the boiler's low operating and maintenance costs is the clean, dry steam assured by B&W Steam Separators. This keeps the turbine on the line for longer periods between cleanings and maintains

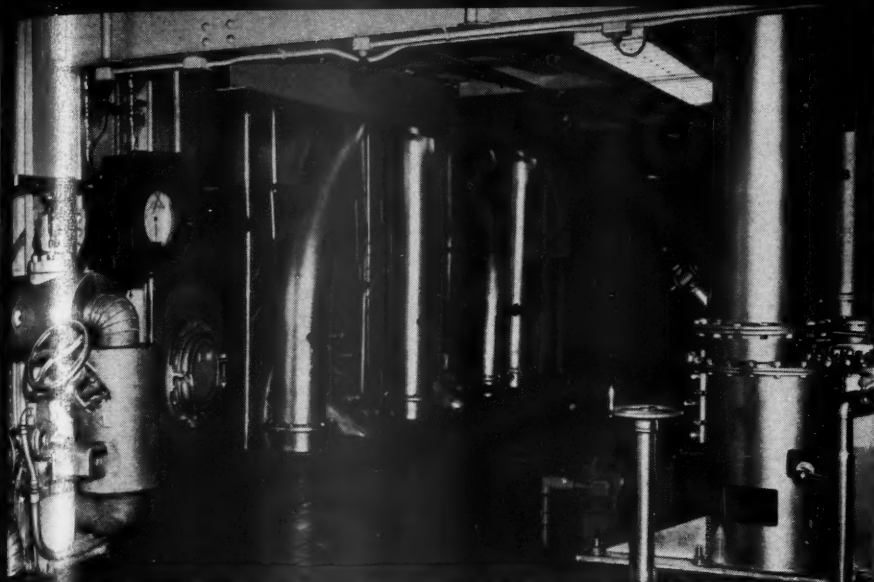
higher turbine efficiency. Other important values include those made possible by B&W Pulverizers, which handle coal as received . . . wet or even iced . . . thus minimizing the danger of shutdown or loss of capacity. Pulverizers also grind coal to the specified fineness, thus assuring prompt ignition and complete combustion.

Advantages of B&W Boilers in central station operation are a result of B&W engineering advances in the development of economical energy, supported by nearly a century of steam generating experience.

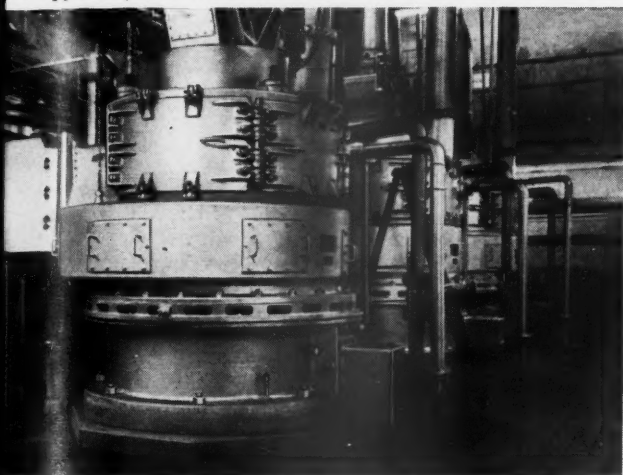
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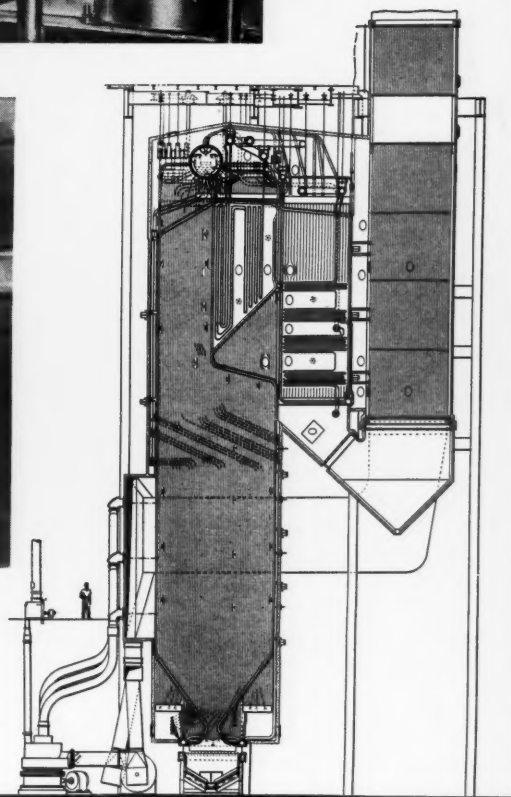
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Four tons of pulverized coal per hr are consumed by
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B&W Pulverizer System. Ease of operation is an out-
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B&W Radiant Boiler at the Southern Indiana Gas & El-
tric Company's Culey Station has steam capacity of 437,0
lb per hour at 1290 psi at superheater outlet and 950 F. D
signed pressure 1450 psi. Net generating unit capability 44,0
kw. Consulting engineers: Commonwealth Associates, Inc

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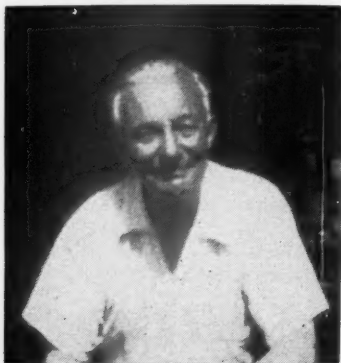
BOILER
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Pages with the Editors

DOUBTLESS many Americans were impressed, but relatively general notice has not been given to the high morale and sense of dedication of essential public service employees displayed during the miserable weather conditions of mid-February. Because the storms which paralyzed the eastern half of the country came over the week end, most inhabitants of our cities and suburbs were basically comfortable. There were inconveniences and anxieties, of course; but for many there was nothing to do but sit back and enjoy the enforced vacations of extra holidays declared by federal and state authorities and many business concerns.

For those who had to stay on the job in fair weather and foul, there were many hardships and discomforts. In this category, the employees of public utility industries ranked high, if not on top of the list. And it is a fairly long list, including police and firemen, hospital staffs and doctors, and all those who struggled against odds to keep highways open.

BUT there were also the telephone company employees, who maintained an astonishingly high level of service. The electric utility employees also kept the power on during a period when so much depended on heating plants, lighting, and other ap-



JAMES H. COLLINS



JOHN J. JOSEPH

pliances functioning during subzero temperatures and blizzardous conditions. There were gas and oil company employees, dedicated to the hard chore of seeing that their respective fuel supplies were delivered notwithstanding terrific peak demands coming simultaneously throughout most of the nation.

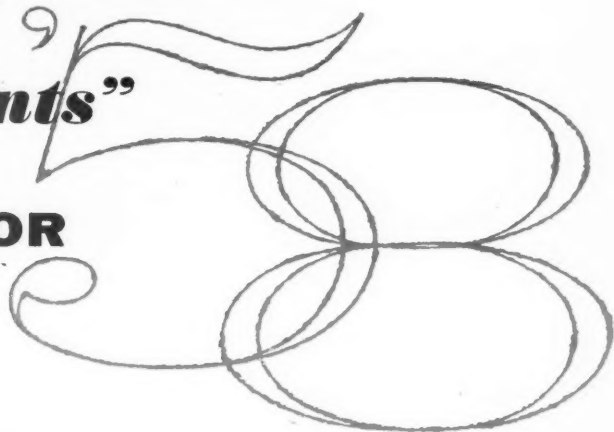
THERE were the bus drivers and the cab drivers and the mailmen. There were railroad and airline employees. There were city employees, state and county employees, who stayed on the job; garage operators who rescued thousands of motorists and kept service stations open so that others could continue on their way. One could not attempt to exhaust the list in a short space without including a good many other service categories, such as the Coast Guard, the emergency switchboard operators and dispatchers of all kinds, and even such personal service operations as hotels and highway taverns functioning through it all, so that the hardship and discomfort of the traveling public were kept down to a minimum. This was the great Army of Public Service—broader, of course, than the conventional list of public utilities, but certainly including such utilities of every description.

COMBUSTION'S

SCHEDULE OF

"Main Events"

FOR



Dedication of World's Largest, Privately Owned, Integrated Facilities for Nuclear Research, Development and Manufacture

C-E's \$15,000,000 Nuclear Division at Windsor, Connecticut. Ground broken December 1955; construction completed in late '57; dedication in Spring of '58.

Construction of Nuclear Submarine Prototype

At C-E Nuclear Division, Windsor, Connecticut. First nuclear submarine prototype to be designed and built at other than AEC-owned facilities.

Shipment of Largest and Most Complex Nuclear Vessel Built to Date

Reactor vessel for Enrico Fermi Nuclear Power Station.

Completion of Manufacture of World's Highest Pressure, Highest Temperature Boiler

5000 pounds per square inch; 1200 deg. Fahr.

Engineering and Partial Manufacture of World's Largest Boiler

First boiler ordered to serve a turbine generator with a capacity as high as 500,000 kw.

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Two completely shop-assembled boilers, one with a capacity of 100,000 pounds of steam per hour, and one to operate at a pressure of 1800 pounds per square inch and 1050 deg. Fahr.

These are some of the achievements which will maintain Combustion's leadership in 1958 in its major field — the creation and building of advanced designs of equipment for the generation of power or heat from conventional or nuclear fuels.

And, in another significant area, Combustion expects to set a new record this year — *the largest volume of shipments and billings in its history.*

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C-136

IT so happens the opening article in this issue deals with the sensitive feeling which utility companies and their employees must have in relation to the public. Why must a public utility company, more than any other kind of a company, be so insistent on that old motto of good business relations—"the customer is always right"? This opening article tells us about Ohio Bell's Community Living Program. It is a long-range plan with the goal of educating every employee to the needs and benefits of substantial public relations. The employee is essential to this plan; but it has also stimulated many management people to examine their own attitudes toward the telephone company, as they may appear to their neighbors and friends.

JOHN J. JOSEPH, author of this article, is the vice president in charge of public relations of the Ohio Bell Telephone Company, and a native of Ohio, as well. He was educated at Ohio Wesleyan University (AB, '21) and took his law degree at Cleveland's Western Reserve University (LLB, '28). He also obtained the honorary degree of Doctor of Laws from Ohio's Bowling Green University in 1943. MR. JOSEPH started his career with Ohio Bell in 1929 in the plant department, and rose to his present position by 1948. He makes his home on a farm in Knox county, Ohio.

* * * *

ONE of the old-fashioned economic axioms which has been exploded in Great Britain is the idea that Socialism or nationalization of industry is a one-way street. Karl Marx, and other Socialists of the extreme or Communist school, have gained a lot of unearned mileage out of the assumption that there can be no voluntary or democratic turning back from Socialism once started. They were sure that nothing short of a reactionary revolution or military defeat, after which the conqueror could impose his will, would permit the relinquishment of Socialism once established. But the experience of the steel industry in Great Britain shows that this notion is just about as wrong as many others preached by Marx.



JOHN D. GARWOOD

DR. JOHN D. GARWOOD, professor of economics at the Fort Hays Kansas State College, describes the denationalization of the British steel industry in a way which opponents of government ownership in this country will find interesting, if not profitable. DR. GARWOOD is a graduate of the University of Wisconsin (MA) and the University of Colorado (PhD). He has also done graduate work at the Universities of Louisiana and Southern California. Prior to his present faculty post he had teaching experience at the Universities of Louisiana and Colorado, and has written a number of articles on public utility regulation and business economics.

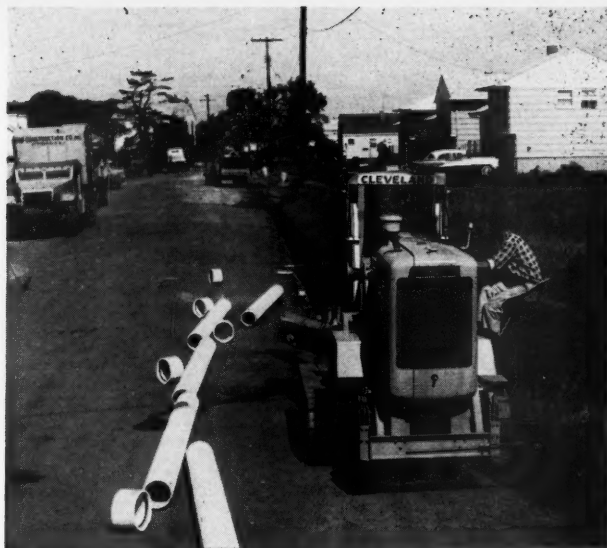
* * * *

OCEAN brine and inland brackish waters may be freshened on a large scale in ten to fifteen years, say Interior Department engineers. And a "breakthrough" might come sooner. Industry will be the first customer, so utility and industrial engineers are advised to watch progress. A little government money has developed surprising results among private investigators. JAMES H. COLLINS, author of business articles, in his account which begins on page 374, explains what has been going on in the past five years, during which Uncle Sam has become directly interested in getting the salt out.

THE next number of this magazine will be out March 27th.

The Editors

**Trench digging
with Cleveland
cuts repaving
costs 25%**



ERN CONSTRUCTION CO's new Cleveland 110 Trencher cut repaving costs 25% on the installation of 11,000 feet of 12 and 8 inch pipe throughout East Brunswick Township near Springfield, New Jersey. Trench was 5½ feet deep and 24 inches wide. Foreman Henry Appleby says:

"We're able to reduce repaving costs 25% with the Cleveland because it cuts cleaner, narrower trench than the backhoe method we used previously."

"We get better production, too," says Appleby. "The Cleveland digs about 780 feet of trench per hour compared to about 100 to 150 feet with the backhoe."



The CLEVELAND TRENCHER co.

20100 St. Clair Avenue

Cleveland 17, Ohio

Coming IN THE NEXT ISSUE

(March 27, 1958, issue)



COMPULSORY ARBITRATION FOR UTILITIES—A REAPPRAISAL

This is an objective article discussing both sides of the controversial suggestion that there should be compulsory arbitration of utility disputes. The author is Dr. Edward Sussna, assistant professor of industry at the University of Pittsburgh. The actual results of any forced arbitration are problematical. We know what happened recently in New York city during the subway strike, and other situations where litigation resulted in the invalidation of so-called state utility antistrike laws. Labor unions are exempted from the rules against conspiracy which are used to prevent price fixing by businessmen. Some people assert that forced labor results from governmental interference. The practical problem is that the mass discomfort caused by utility strikes may be such that the people may eventually insist on compulsory arbitration.

IS TAXED SPEECH FREE SPEECH?

When a hard-pressed railroad industry pays for national advertisements and publicity to point out unfair features of its competition, is that a business expense? When any other kind of business seeks to fight competition in the only available avenue open—the space ad—is that a business expense? Generally it is agreed that it is, except for electric utility companies seeking to expose allegedly unfair competition for public favor by the forces of public ownership. Recently the Internal Revenue Commissioner handed down a ruling that such expenditures were not deductible for tax purposes. R. D. Furber, president, Public Utilities Advertising Association, has raised a very timely and thought-provoking challenge to the idea that utility companies cannot speak in their own defense as a matter of regular business operation.

A CRITIQUE OF TVA ACCOUNTING PRACTICES

In comparing TVA accounting standards with those of business-managed utilities, there is a tendency to overlook fundamental and intrinsic differences which cannot be resolved. In other words, it is a fair question whether such comparisons can ever be valid because of the inherent character of TVA as a government-managed corporation, as distinguished from business-managed, investor-owned utility company operations. This article by Herman Stekler, research associate, School of Industrial Management of the Massachusetts Institute of Technology, is an effort to appraise these fundamental differences in their proper light and to render a critical valuation of TVA accounting methods. One misconception, for example, has been the yardstick idea whereby TVA rates are used as a standard for comparative efficiency of various privately owned companies. Mr. Stekler rejects this as unjustified for the simple reason that TVA was primarily designed as a multipurpose system and would never have been constructed in its present form for power generation only.



Also . . . Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.

The future belongs

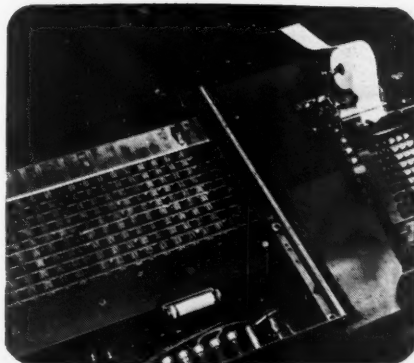
to those who prepare for it

WHETHER rate structures are the 'chicken or the egg' in future planning, a first and basic requirement is accurate, continuing monthly analyses of present billing.

Any workable formula for projection of future operations and their capital requirements, must in some measure be based upon what is happening *now*.

R & S can produce these analyses quickly and economically by its "One Step Method of Bill Analysis" on the exclusive machine of its invention shown below. Important too, is our 20 year record of serving hundreds of companies, who have found R & S analyses enjoy considerable prestige with rate commissions. A further advantage is, all the analyses are done in our office, your personnel and equipment are not involved.

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—MONTAIGNE

MILTON CLARK LIGHTNER
*President, National Association
of Manufacturers.*

"There's nothing wrong with politics except for some of the people that are in it, and maybe it will be better if you push some of them out."

ELMER L. LINDSETH
*President, Cleveland Electric
Illuminating Company.*

"We firmly believe that only through a free interchange of opinion, which brings vital issues out into the open, can we keep our American society functioning smoothly and efficiently."

GOODWIN KNIGHT
Governor of California.

"A Capitalist is not defined by the worldly wealth he possesses. A Capitalist is reckoned by his incentive spirit, inventiveness, ingenuity and perseverance, and his ability to secure the best possible price for the commodities or services he sells, regardless of his particular position in our scheme of things."

KINSEY M. ROBINSON
*President, Washington Water
Power Company.*

"A lot of things are being done to increase the power supply of the Northwest. . . . Until the laws of Washington are changed it will be difficult for private companies to build power plants in this state. The major problem here is that a public utility district can take over a new plant by condemnation even before it gets into production."

EDITORIAL STATEMENT
Los Angeles Times.

"Experience has repeatedly shown that private enterprise can offer goods and services on a more efficient and cheaper basis than can government establishments, in spite of the fact that the latter enjoy tax advantages and certain other bookkeeping benefits which tend to give a misleading impression as to their actual operating costs."

ROBERT C. TYSON
*Chairman, finance committee,
United States Steel Corporation.*

"The company that operates more efficiently than another pays a relatively higher tax, and so in effect pays a penalty for being more efficient. Taxes levied at high rates against efficiency cannot help but impair that efficiency. This, in turn, affects a corporation's ability to finance its own growth, and this is certainly not in the national interest."

J. M. SYMES
*President, Pennsylvania Railroad
Company.*

"In short, the rails *have* to grow if the economy is to be kept expanding and the nation kept militarily safe. Railroads are not a luxury or comfort that can be dispensed with. They are a stark necessity—like the fuel and food industries—and like such industries they must grow with the increasing amount of work to be done. I imagine you will agree that—when national necessity dictates that an industry grow—it is one of the basic ingredients of any permanent—as against temporary—growth industry. Our problem here is not to *be* necessary, but to get the nation—for its own benefit—to recognize that we *are* necessary—and so to stop hampering our necessary growth."



Typical result: Development and installation of complete systems and equipment for personnel department

TAMPA ELECTRIC COMPANY SAVES 5 WAYS

with complete records management program

Remington Rand specialists organized and set in motion a long-range Records Management program at Tampa Electric Co. that is paying off in substantial benefits and savings.

File analysts studied the existing systems, inventoried the records, established records retention controls, reorganized the system based on findings of the analysis, set up operating manuals for each department and all phases of operation and trained the necessary personnel for operating and perpetuating the system.

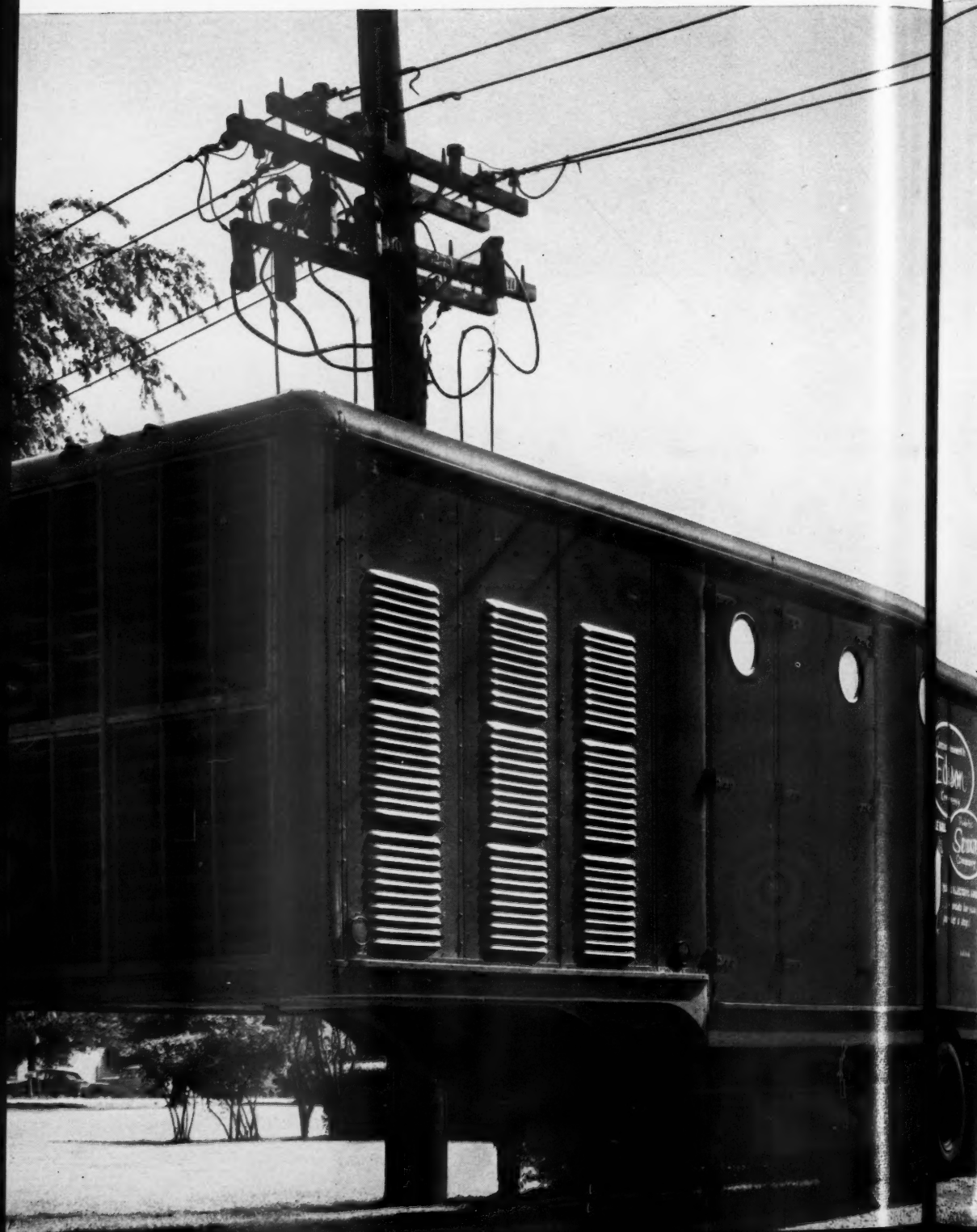
The Results Are Substantial

- 1 TIME** saved in daily clerical operation...less executive waiting time for information.
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- 3 MATERIALS** saved by establishing standards that assure proper file maintenance through use of operating manuals.
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- 5 PERSONNEL** saved through proper training and increased accuracy and efficiency of finding and filing.

How About Your Records? Get full particulars on how your utility can effect tremendous savings in the management of your records. Write Room 1378, 315 Fourth Avenue, New York 10—ask for X1615A.

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Line relocation



Speed not be costly

Not, that is, when work can be completed during regular hours and without interrupting service. And many utilities are doing just that—paring the high cost of line relocation and other maintenance and repair needs—with versatile Electro-Mobile generating units.

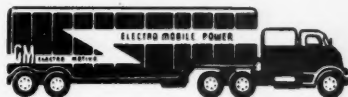
For example, a 500 kw trailer like the one shown here can travel most anywhere, pick up a load in minutes. Crews can do their work faster, at lower cost, and all the while *normal service* is maintained.

Further, these units can be utilized as an immediate source of emergency power. Their quick mobility can provide the means to continued service, and continued good public relations.

The economies of Electro-Mobile Power have been demonstrated on many utility applications. Why not ask your Electro-Motive representative to outline briefly ways these trailer units can help improve service and lower costs for your system?



1000 kw units for use on sidings or placed on piers for semi-permanent use.



500 kw units offer excellent mobility for many temporary applications.

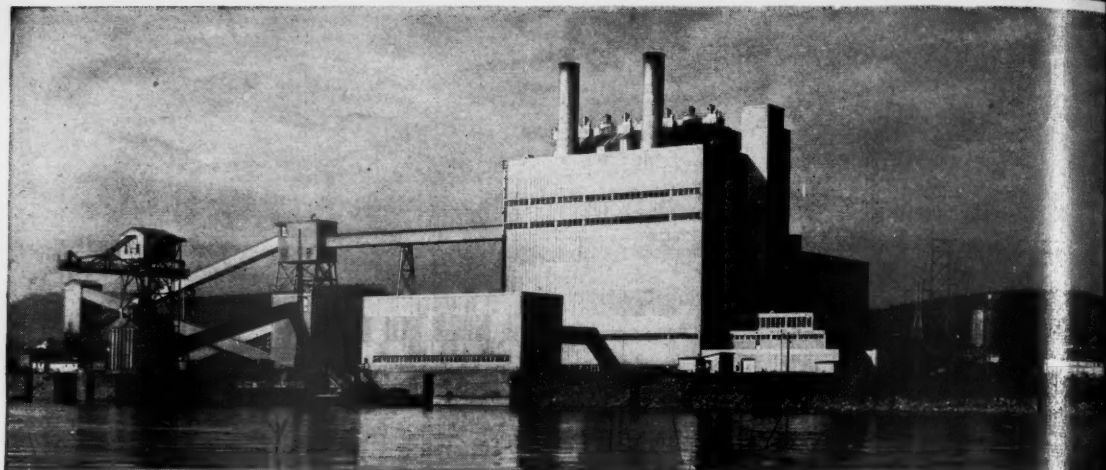


ELECTRO-MOTIVE DIVISION GENERAL MOTORS

LA GRANGE, ILLINOIS

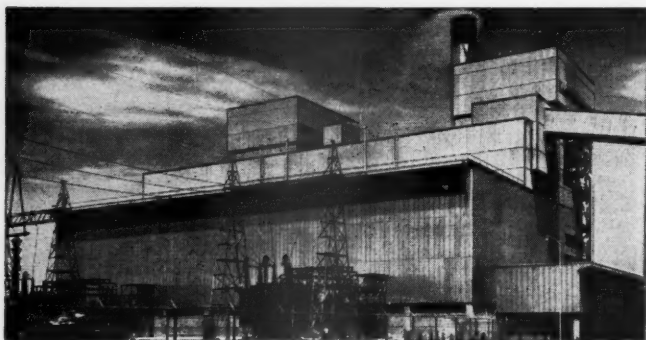
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In Canada: General Motors Diesel Limited, London, Ontario





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Offices in Principal Cities

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Q-Panel walls (above) go up quickly in any weather because they are dry and hung in place, not piled up.

More than 32,000 sq. ft. of Q-Panels were used to enclose the impressive Hawthorn St. Electric Station (left) of the Kansas City, Missouri, Power and Light Company. Ebasco Services, Inc., designed and built the plant.



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ARCH 13, 1968—PUBLIC UTILITIES FORTNIGHTLY



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You get extra quality at no extra cost— Dodge is one of the low-priced 3!

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First in power! Discover the extra traffic pep and extra pulling power that you get from *Power Giant* V-8's, with up to 27.5% more power than competitive trucks.

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First in economy! In addition to low first cost, you save with exclusive Dodge Power-Dome V-8 engine design that gives you extra gas mileage and reduces power-robbing carbon deposits.

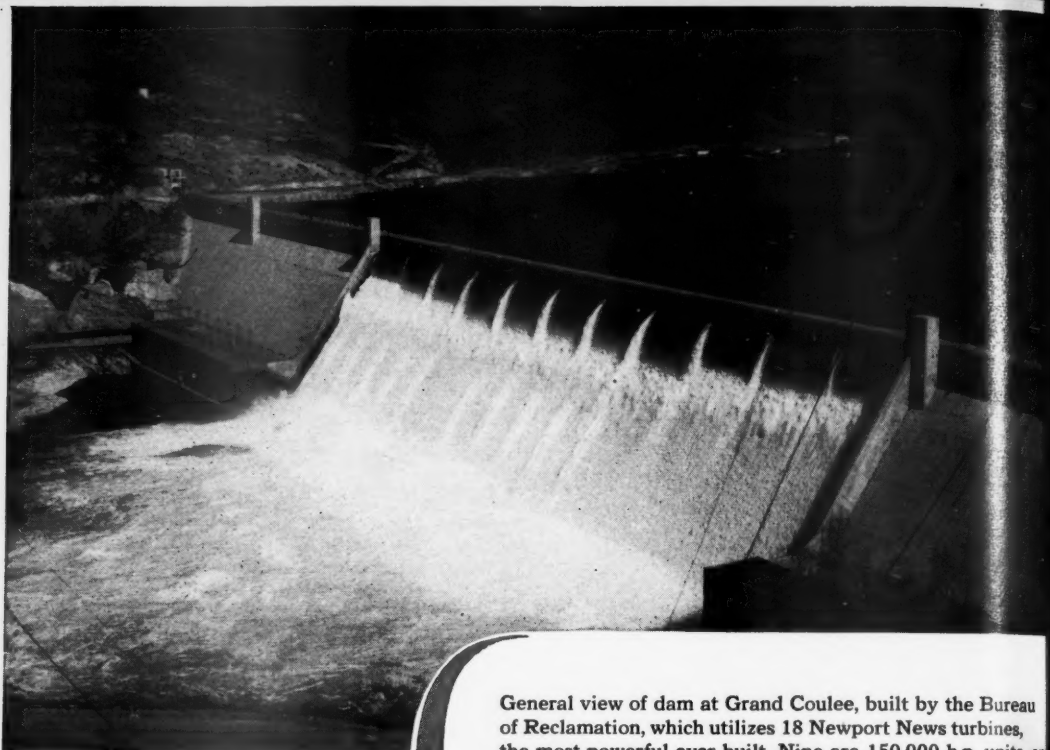
First in styling! Your business gets a prestige bonus with a Dodge *Power Giant*. Its striking dual headlights, massive new grille and flowing, sculptured lines set new truck styling trends.

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DODGE *Power Giants*



General view of dam at Grand Coulee, built by the Bureau of Reclamation, which utilizes 18 Newport News turbines, the most powerful ever built. Nine are 150,000 h.p. units, and the other nine are rated at 165,000 h.p. each.

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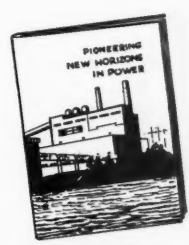
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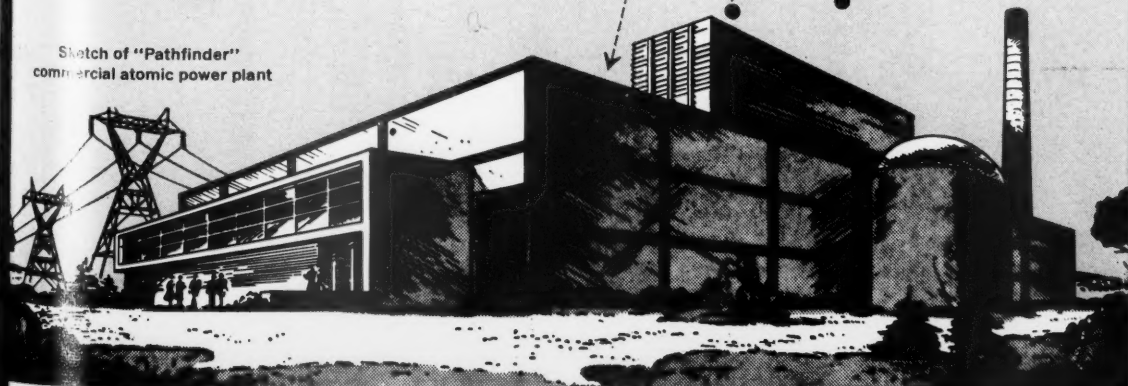
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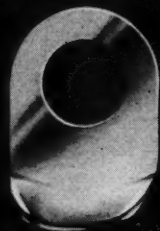




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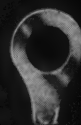


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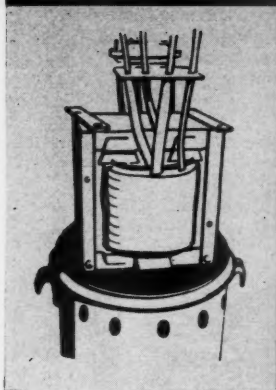
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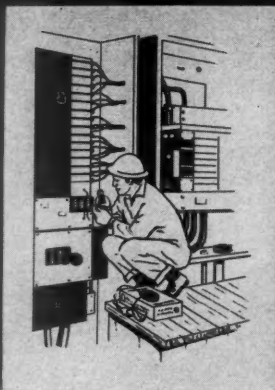
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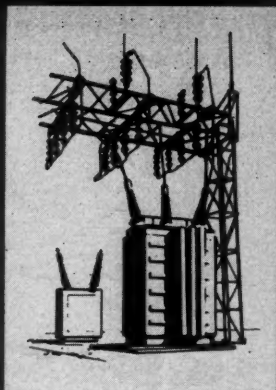
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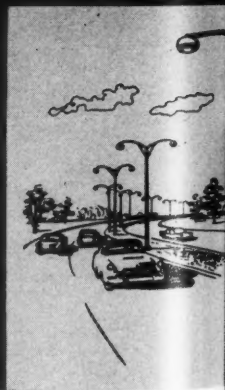
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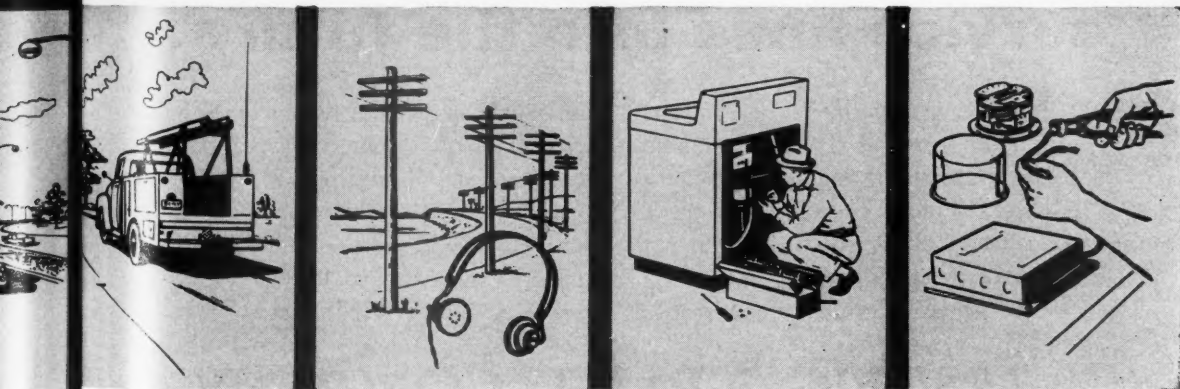
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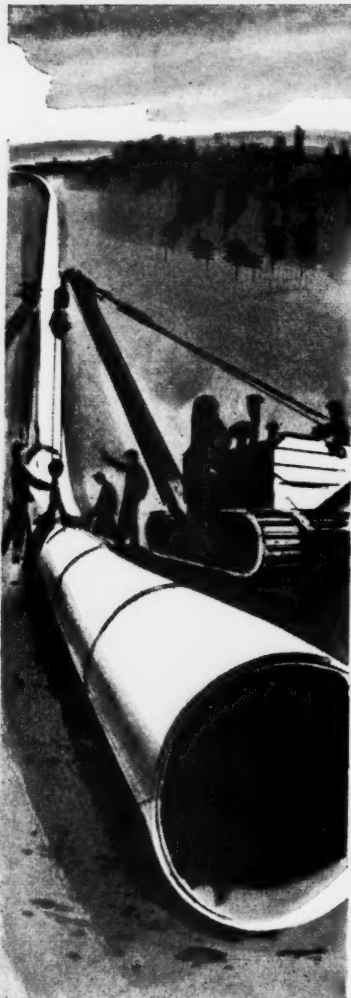
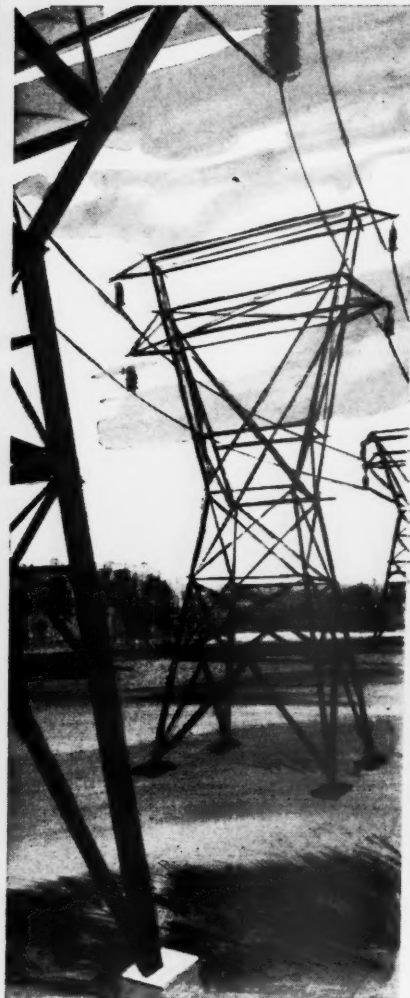


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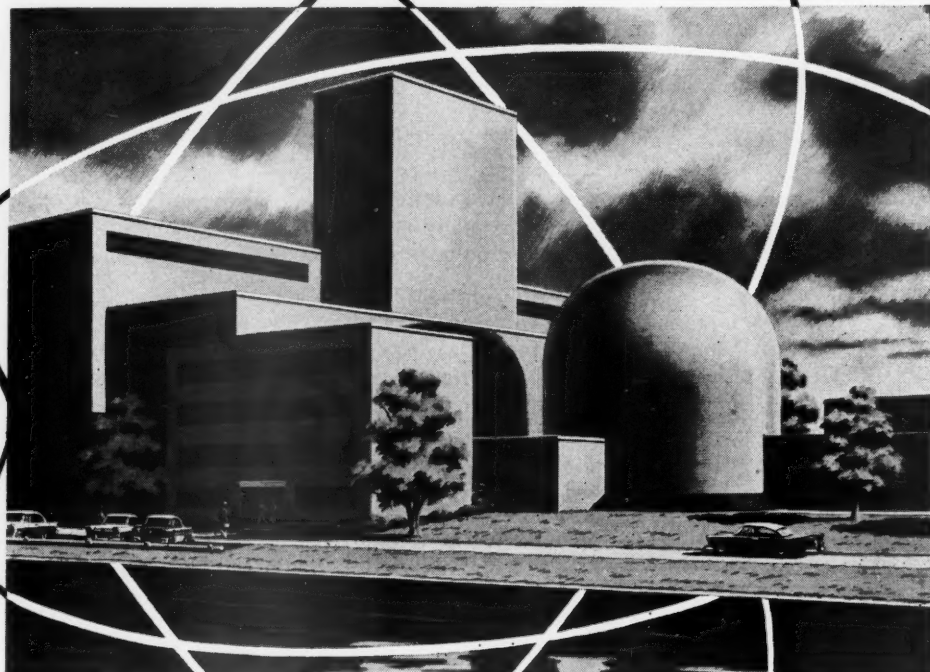
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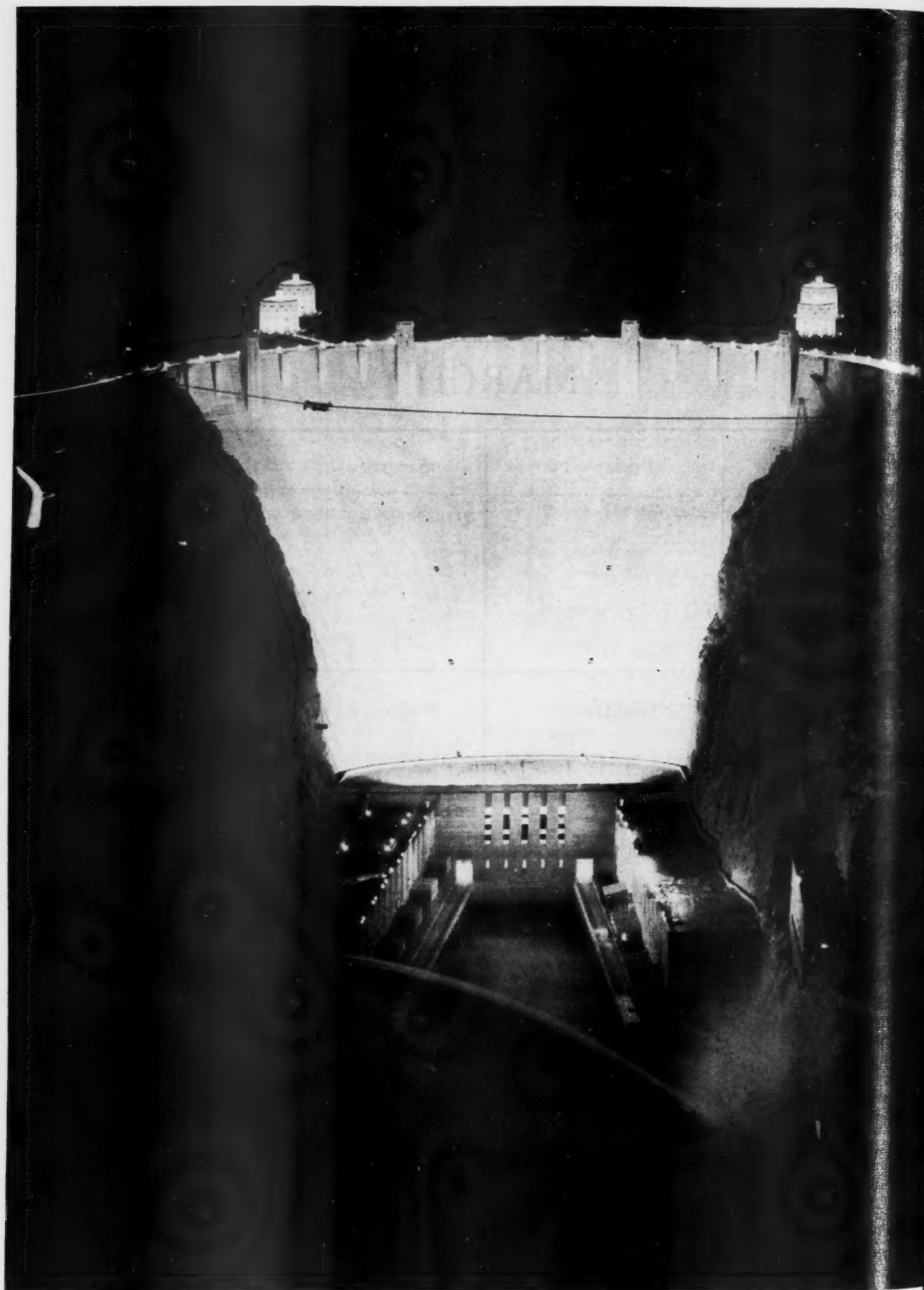
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UTILITIES

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MARCH

Thursday—13 <i>Public Utilities Advertising Association begins regional meeting, Montreal, Quebec, Canada.</i>	Friday—14 <i>American Water Works Association, Kansas Section, ends 3-day annual meeting, Salina, Kan.</i>	Saturday—15 <i>American Gas Association will hold general management section conference, Washington, D. C. Mar. 31-Apr. 2. Advance notice.</i>	Sunday—16 <i>Nuclear Congress, cosponsored by American Society of Mechanical Engineers and the Engineers Joint Council, begins, Chicago, Ill.</i>
Monday—17 <i>National Association of Corrosion Engineers begins annual conference and exhibition, San Francisco, Cal.</i>	Tuesday—18 <i>Steel Founders Society of America ends 2-day annual meeting, Chicago, Ill.</i>	Wednesday—19 <i>American Institute of Electrical Engineers and American Society of Mechanical Engineers begin joint management conference, Boston, Mass.</i>	Thursday—20 <i>New England Gas Association begins annual meeting, Boston, Mass.</i>
Friday—21 <i>Gas Appliance Manufacturers Association will hold annual meeting, White Sulphur Springs, W. Va. Mar. 31-Apr. 2. Advance notice.</i>	Saturday—22 <i>American Water Works Association, Montana Section, ends 3-day annual meeting, Missoula, Mont.</i>	Sunday—23 <i>Southeastern Electric Exchange will hold annual meeting, Boca Raton, Fla. Mar. 31-Apr. 2. Advance notice.</i>	Monday—24 <i>Institute of Radio Engineers begins annual convention, New York, N. Y.</i>
Tuesday—25 <i>Iowa Independent Telephone Association will hold annual convention, Des Moines, Iowa. Apr. 8, 9. Advance notice.</i>	Wednesday—26 <i>American Power Conference begins twentieth anniversary meeting, Chicago, Ill.</i>	Thursday—27 <i>Oklahoma Utilities Association begins annual convention, Oklahoma City, Okla.</i>	Friday—28 <i>American Water Works Association, Illinois Section, begins annual meeting, Chicago, Ill.</i>



Authenticated News

The Dam Which Lights Itself

*A dramatic night view of Boulder dam—looking up Black Canyon
towards Lake Mead.*

Public Utilities

FORTNIGHTLY

VOL. 61, No. 6



MARCH 13, 1958

Ohio Bell's Community Living Program

Ohio Bell's Community Living Program is a long-range plan with the goal of educating every employee to the needs and benefits of substantial public relations. The employee is essential to this plan; but it has also stimulated many management people to examine their own attitudes toward the company, as they may appear to their neighbors and friends.

By JOHN J. JOSEPH*

VICE PRESIDENT, OHIO BELL TELEPHONE COMPANY

“WHY in the world can't we tell the public to go jump in the lake if they don't like us?” asked a red-faced engineer recently. “I can't see why we have to go around begging pardon for being big and apologizing for being automated. We do a good job cheaply. What else is important?”

The engineer's prescription—indignation with a tincture of pride—is to be pre-

*For additional personal note, see “Pages with the Editors.”

ferred to an attitude of employee indifference, but the prescription merely points up a public relations problem which has been facing the communications industry for some time.

Bigness and inscrutable anonymity seem to be the curse of the growing telephone business. As automation improves service, loss of direct personal contact with the customer results. The undesirable secondary effect of automation has stimu-

PUBLIC UTILITIES FORTNIGHTLY

lated the industry to find a workable program through which the blight of impersonality might gradually be removed. The Ohio Bell Telephone Company feels that it may have developed such a program.

COMMUNITY Living projects and customer relations programs are common areas of activity in American industry today. In the telephone industry, Community Living means several things. It means, primarily, efficient, friendly telephone service that includes the "overtones" and special considerations not fully required by routine. It means the participation of both company and employee in worth-while community activities and the identification of community problems and company problems. It means the development of an intelligent sensitivity to community attitudes. It means a foresighted re-evaluation of policy with the community firmly in mind. It means the development and recognition of initiative among local telephone people who plan and build better community relations at the grass-roots level. It means informing the community of company plans, needs, work, and intentions. With these considerations in mind, the problem, of course, is to design a program which will be at once simple and efficacious.

THE most recent impulse behind the development of Ohio Bell's attempt to solve the problem came from ex-president John A. Greene in a series of talks to supervisory people beginning in January, 1956.

Mr. Greene outlined the problems of automation and the increased importance of utilizing every personal contact made by a company employee.

"We can all of us try in every contact we have with the customer," said Mr. Greene, "not only to do a good job but to do whatever occurs to us individually to put in a little polish on that job; to make it not only good but noticeable to that customer, remembering that it's those extra things that he remembers either favorably or unfavorably. You might call it overtones . . . It is this personal contact and the personal contribution that we can make, and everybody will make it differently. It isn't anything written down anywhere; it is truly the spirit of service expressed by any telephone individual. In other words, an important part of it is that we must so far as possible be a part of every community where we operate."

CUSTOMER attitude surveys throughout the Bell system showed consistently that customers who knew and talked with telephone people had a higher opinion of their local organizations than did those who were without this contact. Furthermore, the surveys revealed that the "no opinion" group (those persons with attitudes not necessarily negative but nescient or indifferent to one or more aspects of Ohio Bell) was steadily growing in proportion to the rate that personal contact between the public and the company was lost.

The value of personal contact as a public relations medium was clearly illustrated by a recent survey made in Cleveland. One thousand respondents answered the following question: "Where would you say you have gotten most of your information about the telephone company?" The survey revealed that 37 per cent of the respondents received their information



Friendliness and Big Business

"BIGNESS and inscrutable anonymity seem to be the curse of the growing telephone business. As automation improves service, loss of direct personal contact with the customer results. The undesirable secondary effect of automation has stimulated the industry to find a workable program through which the blight of impersonality might gradually be removed. The Ohio Bell Telephone Company feels that it may have developed such a program. Community Living projects and customer relations programs are common areas of activity in American industry today. In the telephone industry, Community Living means several things. It means, primarily, efficient, friendly telephone service that includes the 'overtones' and special considerations not fully required by routine."

from contacts with the company: service, observation, dealings, visitations, and business contacts of various kinds. An additional 35 per cent of the respondents said they got their information from friends, relatives, neighbors, or family members who worked for the company.

Obviously, therefore, personal contact of any kind between the public and telephone people is greatly to be desired. The increase of mechanization in the telephone industry, however, has reduced that con-

tact alarmingly. Bell system figures reveal that in 1946 there was an average of 1,207 personal and over-the-phone contacts per customer with telephone company employees; in 1956 the number dropped to 485. The forecast for 1965 is 204. The ideal aim of any strategy in Ohio Bell's program was clear: restore personal contact.

By December, 1956, Ohio Bell's Community Living Program, geared to

PUBLIC UTILITIES FORTNIGHTLY

rejuvenate the personal element, had become a major employee information project.

By March, 1957, the training of seventy-eight group leaders was completed, and the project was officially launched. Since that time the program has received complete acceptance by all the operating departments and has registered an enthusiastic response among pilot-test participants. A staff supervisor, upon completing his first presentation of the program, wrote:

I have presented several flip charts previous to this one, but have never experienced a group applauding at the completion. At the end of one of the meetings, the group stood and applauded for almost one-half minute. I am certain this was not because of how the material was presented. Instead, it appeared to have been an immediate and spontaneous response to having listened to something so pleasantly informative that it had this immediate and favorable impact.

The program, directed to the management group, represents the general integration and refinement of many embryonic customer relations projects devised by district and local organizations. The master program gives focus, direction, and official recognition to the unma-tured projects begun at the local level. The principal aim of the program, as has been said, is to replace lost personal contact in so far as this is possible; auxiliary aims are to personalize mechanization and remove the stigma of bigness.

THE administration of Ohio Bell's program is remarkably simple: A

group leader, a humorously illustrative flip chart, a pad of paper, a blackboard, and a handful of pamphlets are the materials. Thirteen management people, the average class size, are the audience. The time allotted: three hours. The immediate end of the meeting is to convince the employee that the company's very right to exist is inextricably involved with the public's good opinion and acquiescence in that existence. The participant is made to understand that public sentiment and good will control the climate necessary for the fulfillment of the company's destiny, and that he, the employee, in a very real way may influence the public's attitude. Invariably, the desired end is accomplished.

The meetings, purposely interdepartmental, are guided by a flip chart which explains graphically the nature and desirability of good public relations, the curious identity in the public mind of the telephone company and the employee, the *mutual* benefits of good customer relations, the responsibility of the employee for building better public relations through civic enterprise and articulate community living, and concrete examples of how the employee may be effective in this campaign.

DURING the exposition of the flip chart materials, the leader elicits individual responses, illustrative experiences, and group discussion. The burden of discovery is placed on the participants whenever possible. The leader, for instance, may divide his group into sections in order to stimulate competition in the solution of basic problems. He may ask, "How will good public relations benefit us? How will they benefit the company?" The informality of the meetings permits easy address

OHIO BELL'S COMMUNITY LIVING PROGRAM

and frequently results in animated discussion and sometimes argument over phraseology as well as concept. Repeated affirmation is a pedagogical device used to great effect, but never to the point where repetition becomes wearisome. Employees are encouraged to criticize the program, attack its concepts, and insist on a complete clarification of its methods and objectives. In a recent meeting the ideal of the "talking employee" was questioned:

"Won't we run into the danger of becoming insufferable bores by propagandizing our friends?" complained a traffic department superintendent.

"You're not expected to adopt a soap-box attitude," replied the group leader. "However, it's part of your job as a member of management to be a sincere and honest representative of the company at all times."

"I should think a common sense attitude would do the trick," offered a plant foreman. "People look to us for information about the company, and it's up to us to give it in a straightforward, helpful manner."

"Right," said the group leader, "but don't forget to avoid flippancies, jokes, or evasions. Satisfy your neighbor's curiosity in a constructive, thoughtful way. Be guided both by the situation and good taste."

OHIO BELL's Community Living plan is admittedly long-range with the ultimate goal of educating every employee to the needs and benefits of a substantial public relations program to which the employee is essential. The plan already has stimulated management people to examine their personal attitudes toward the com-

pany as they may appear to their neighbors and friends. The employee's awareness of his importance to the company merely as an active, *articulate* member of his community has been a fortunate stroke of public relations genius; it has effectively spanned the twin streams of customer and employee relations. The program has effectively increased the employee's sense of importance and heightened his job satisfaction. What was initially an incidental product of the program has become a matter of major importance.

The project has resulted, therefore, in an accomplishment of distinct value apart from the desired elevation of public attitude targeted by the program. If nothing more is achieved, the program has been measurably productive.

THE genuineness of employee participation and interest in the Community Living Program and its designs is attested to by every group leader, many of whom are repeatedly astonished by the enthusiastic reception accorded to the three-hour sessions. Many, if not most of the participants, were quite unaware of the public's sensitivity to private opinion about the telephone company. They were much impressed by statistics: by the fact, for instance, that the "no opinion" group in Ohio has steadily increased over the years. The increase, however, is not merely proportional; there is a real growth in the "no opinion" group. In 1949, it constituted 32 per cent of Ohio Bell customers. Today it constitutes 38 per cent of Ohio Bell customers. Community attitude surveys point out that each employee has in his day-by-day acquaintance an average of fifty people: neighbors, tradespeople, professional

PUBLIC UTILITIES FORTNIGHTLY

men, friends, etc. If each employee could successfully influence but *one* of these people, a significant forward stride would be made. It makes sense to the employee.

Everything in the program is spelled out with the utmost clarity: exactly what help is wanted; why it is wanted; how it is to be given; what the company expects to do, etc. The employee is asked to promote the various motion pictures, lectures, and demonstrations which Ohio Bell offers the public. He is encouraged to learn more about his company so that he may become an informatively helpful talking employee. He receives specific examples of just how he can meet situations and answer questions. His help is actively and persuasively sought for its great functional value in Ohio Bell's overall public relations program.

THE Community Living Program does not intend control over the public relations activities of the local offices. The

program is designed rather to effect inter-departmental co-operation and maximum co-ordination of effort between general headquarters and local offices in the field of community relations. Great freedom is given the local office that it may solve its own perplexities, develop initiative, and stimulate an imaginative outlook on the peculiar problems and needs of the local community. It is not the aim of the program to unify objectives at the expense of the individual approach.

THE Community Living project at Ohio Bell has brought to the management employee a feeling of importance and a genuine awareness of one of the basic concerns of a public utility. Ohio Bell feels that this accomplishment is both meaningful and productive. For that reason it is investing almost 15,000 hours of management time in the program and hopes to introduce a shortened version to its non-management force within the next year.

Of Mouse Traps and Earnings

"THE old formula for business success was simple. Build a better mouse trap, it advised, and the world will beat a path to your door. That basic truth has not changed. But how do you go about making a better mouse trap—or a better automobile—or providing better telephone service? Many things go into the making of a better product. It may be better personnel, better research, or the possession of a better patent. And, too, it may be better EARNINGS. . . .

"Good earnings mean that everything a company does can be done in a way that, in the long run, produces better service at less cost. Management does not have to put the brakes on progress in order to make ends meet in any business year. The result is that management can make the choice that gives better service in the end, or reduces the final cost, or a combination of both. As far as the customer is concerned, better earnings enable the telephone company to give him better service at lower cost. So the wheel turns.

"You build a better mouse trap and the world beats a path to your door. Your earnings are better. Because your earnings are better, you can build an even better mouse trap."

—EXCERPT from "Telephone News," published by Bell Telephone Company of Pennsylvania.



A Lesson in Limiting Governmental Intervention

"He that would seriously set upon the search of truth, ought in the first place to prepare his mind with a love of it. . . . How a man may know whether he be so in earnest, is worth inquiry; and I think there is one unerring mark of it; viz., the not entertaining any proposition with greater assurance, than the proofs it is built upon will warrant. Whoever goes beyond this measure of assent, it is plain, receives not truth in the love of it; loves not truth for truthsake, but for some other by-end."

—JOHN LOCKE, *The Dangers of Enthusiasm*.

By JOHN D. GARWOOD*

It is probable that the ramifications of the British general election in 1945 have been more disturbing to political complacency than any comparable event in our generation. It came as the rudest kind of a shock that England, cradle and citadel of Capitalism, should turn from the path charted by Adam Smith to the less charted and uncertain vistas of Socialism. One may well ask himself the question—if the green wood burns, what about the dry?

History turns no sharp corners. What happened in England has illuminated the

whole landscape. This 1945 victory gave the Labor party 393 out of 640 seats in the House of Commons. But, did the minority members fight a Thermopylae? They did not. Until the steel industry was brought before the bar the principle of nationalization was hardly challenged. It is here that we find the butterfly inside the chrysalis.

There is a lesson to be learned from the British nationalization and subsequent denationalization of the steel industry. This lesson, if we learn it, is a pearl of great price. It is as valid, as certain, as applicable in the U. S. today as a proposition from Euclid.

Truths are not particular to countries;

*Professor of economics, Fort Hays Kansas State College, Hays, Kansas. For additional personal note, see "Pages with the Editors."

PUBLIC UTILITIES FORTNIGHTLY

they cross national boundary lines and remain a disturbing yeast in the leaven of the society in which they find themselves.

To find this truth we need to review the British experience in the steel industry. This is the *sine qua non* of interpreting the brocaded prose which has been a British export since 1945.

The arrival of Socialism in England was sudden but not without warning. As bubbling water reaches a boiling point is predictable, so was this turn of events in England.

Great Britain is a highly industrialized country, drawing heavily on the rest of the world for industrial raw materials and foodstuffs. Except for coal, she is poor in industrial ingredients. Thus, she imports all of her petroleum, cotton, tobacco, non-ferrous metals; nine-tenths of her wool, 80 per cent of her timber, half of her iron ore, over 50 per cent of her food.

In 1938 aggregate figures for imports totaled £851 million. Exports totaled £533 million, income resulting from foreign investment £175 million, shipping and other services £73 million. This meant a deficit of £70 million.

In 1946, partly due to higher prices, imports aggregated £1,092 million. Exports resulting from shipping, investments abroad, goods exports, totaled £888 million. British government expenditures abroad amounted to £290 million, hence an adverse balance of trade of £380 million.¹

In the years 1946 and 1947 nationalization edicts were carried out with the

Bank of England, the coal industry, civil aviation, telecommunications, gas and electricity, inland transport, and finally in 1950-51 in iron and steel.

Of all of the industries nationalized steel remained the *enfant terrible* for the Labor party. Steel's representatives were seemingly immune to the nice explanations of reasonability of government's directives.

In steel and elsewhere there had been a record of intervention by the government and a long line of accusations that the industry was slothful, backward, and monopolistic. Unlike other industries, however, there was no general acquiescence that nationalization was the only workable solution.²

By the year 1870 Great Britain produced nearly half of the world's iron and steel but with the industrialization of the U. S. and Germany, and tariff barriers, this rôle of the leader in steel was sharply curtailed. By 1913 the figure was approximately 10 per cent of the world output.

AFTER World War I economic distress in the industry was attributed by some observers to overcapacity, cossetting of inefficiency, obsolescence of plant and equipment, and antiquity of organization. In 1932 tariff protection was provided the industry on the promise that it modernize, and in 1932 the British Iron and Steel Federation with governmental sanction was organized. Its function was to co-ordinate the trade associations of the industry.

Output was high during World War II,

¹ The White Paper, United Kingdom Balance of Payments, 1946 and 1947, His Majesty's Stationary Office, London; Cmd. 7324.

² *Competitive Economic Systems*, by George P. Adams, Thomas Y. Crowell Company, New York, 1955, p. 398.

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reaching 13 million tons in 1943 and 12 million in 1944 and 1945, an achievement made possible because of deferred maintenance and replacement.

The Labor party's 1945 campaign platform contained the following statement:

The Labor party submits to the nation the following industrial program:

1. Public ownership of the fuel and power industry.
2. Public ownership of inland transport.
3. Public ownership of iron and steel.³

The party took office believing it had a mandate in this area.

Nationalization and Iron and Steel

THE Labor government on November 19, 1945, invited the iron and steel industry to submit a report on the improvements required to put the industry on an efficient operating basis.⁴ The report was duly prepared and presented by the British Iron and Steel Federation.

The report estimated that from 1950-55 domestic use of steel would approxi-

mate 13 million tons annually, export demand would hit 3 million tons.

Thus, a 7-year expansion program was outlined calculated to bring production up to 16 million tons annually. The report specified locations and specifications for new blast furnaces of 4.75 million ton capacity and new steel ingot capacity of 6 million tons annually. In turn, scrapping was proposed for 3 million tons of obsolete blast furnaces and 4 million tons of obsolete ingot productive facilities. One hundred sixty-eight million pounds of capital investment was estimated to be necessary.

The report carried steel industry leaders' considered opinion that there was no need for radical change in industry ownership or control. It also noted that restrictive practices with which the industry had often been charged were not being followed.⁵ In a word the industry leaders did not put themselves in a position of embroidering the thesis that nationalization was necessary or to be desired.

IN spite of this, on May 27, 1946, the Ministry of Supply in the House of Commons offered a motion which carried that, "This House approves a decision of

³ Parliamentary Debates, Vol. 423, No. 147, p. 843.

⁴ *Ibid.*, Vol. 421, No. 126, p. 2,697.

⁵ *The New York Times*, May 8, 1946.

“THERE is a lesson to be learned from the British nationalization and subsequent denationalization of the steel industry. This lesson, if we learn it, is a pearl of great price. It is as valid, as certain, as applicable in the U. S. today as a proposition from Euclid. Truths are not particular to countries; they cross national boundary lines and remain a disturbing yeast in the leaven of the society in which they find themselves. To find this truth we need to review the British experience in the steel industry. This is the SINE QUA NON of interpreting the brocaded prose which has been a British export since 1945.”

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His Majesty's government to bring forward proposals for transferring to the ownership of the nation appropriate sections of the iron and steel industry with a view to its efficient organization in the public interest. The issue is not between competitive private enterprise and public enterprise. The steel industry abandoned methods of competition twelve years ago. It exhibits neither the characteristic virtues nor the defects of competitive enterprise."⁶

A control board was set up to include representatives of management and workers to see that the steel industry operated efficiently and carried on expansion and modernization policies prior to nationalization.

British steel representatives were less than completely co-operative. They locked fingers in their opposition to the program. It was reported that as a condition of joining the board the industry asked for a promise that its board representatives would be under no obligation, collectively or individually, to advise on nationalization. Before agreeing to this the government is said to have asked that industry representatives give the government the benefit of their technical and industrial advice in their individual capacities.⁷

NATIONALIZATION in steel did not proceed at the pace possible in other industries. This despite the 1945 Labor platform to get the job done. The *why* of this story is of interest to those who oppose increased governmental activity in the field of power development and other

areas where public and private questions develop.

The Iron and Steel Act, passed November 24, 1949, created a holding corporation—The Iron and Steel Corporation of Great Britain—which was to acquire the securities of all companies having an average production in 1946 and 1947 of more than 50,000 tons of iron ore, 20,000 tons of pig iron, 20,000 tons of ingot steel, or 20,000 tons of rolled steel. This amounted to 93-99 per cent of total production in these four areas. Vesting date was to be January 1, 1951, or within one year thereafter.

The corporation was empowered to hold the properties nationalized, exercise ownership rights thereover, acquire certain other properties, form new companies, conduct research, provide services for companies held, and borrow and lend funds, for the purpose of promoting the efficient and economical supply of iron ore, pig iron, steel ingots, and hot rolled steel, and assuring that these products are available in such quantities, and are of such types, qualities, and sizes, and are available at such prices, as may seem to the corporation best calculated to satisfy the reasonable demands of the persons who use those products for manufacturing purposes.⁸

THUS on February 15, 1951 (vesting date), the corporation acquired securities in 90 iron and steel companies and 150 subsidiaries employing 300,000 persons. The 250,000 owners were given 3½ per cent stock redeemable in 1978-81. Value was as of value quoted for steel stock on the London Stock Exchange on

⁶ Parliamentary Debates, Vol. 423, No. 147, p. 842.

⁷ *Comparative Economic Systems*, by William N. Loucks, Harper & Brothers Publishers, New York, 1957, p. 350.

⁸ *Ibid.*, p. 350.



Capitalism Gets a Bad Name

"I*N the twentieth century Capitalism in Great Britain has been cast in the rôle of an economic pariah. It has been the CAUSE CÉLEBRE of discussion by the behemoths and the pygmies of economics. Its peccadilloes have been scrutinized on blackboards from Maine to California. It would seem that the economic diagnostician in search of the truth must recognize the cat among the pigeons in the British attempt to nationalize their steel industry. It has overtones for those in the U. S. who resist governmental encroachment in various fields of endeavor. This is the lesson if we but recognize it as such."*

either of two sets of dates. In some cases an agreed-upon value was used.

The companies were left intact as individual corporations with their own corporate names and internal organization, same board of directors and executives. In addition, the same products were produced for the same customers.

The Iron and Steel Corporation in turn dealt with the long-run capital expansion programs, securing capital funds, pricing policy, procurement of raw materials, some research.

Yet these activities had been the province of the British Iron and Steel Federation which represented all companies nationalized. The corporation and the federation cut across each other and duplicated one another's efforts.

THE Conservative government took office in October, 1951. In its election manifesto it pledged a repeal of the Iron and Steel Act—denationalization.

In May, 1953, the Iron and Steel Corporation of Great Britain was ordered to

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transfer all its iron and steel company securities to a newly created body—Iron and Steel Holding and Realization Agency—for the purpose of selling these securities back to the public. Thus, 90 iron and steel companies, nationalized at a cost of over £700 million (the third largest steel industry in the world), were to be returned to private enterprise.

The London *Economist* called the denationalization "an epic of untried techniques in the markets, of the mobilization of vast investment potentials, and of successes snatched from the jaws of defeat."⁹

Conclusion

AN architect can cover his mistakes with ivy, a doctor with sod, a new bride with mayonnaise. The Socialists cover theirs with red tape and freshly ground government directives. It is not unlikely that much of the literature about the "British Experience" has been produced with an abandon that comes of immunity to the facts.

It reminds one of Mark Twain who, having listened to the widely varying estimates of the length of the Mississippi river, marveled at "The fascination of a science where one gets such wholesale returns of conjecture out of a trifling investment of fact."

In applied economics it is hard for the layman, as well as the trained economist, to separate the fact from fantasy and the forest from the trees.

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As noted above, vesting date was February, 1951, when all corporate securities were to be placed in the government corporation. In May, 1953, the bill was passed for the denationalization of the iron and steel industry. Thus, nationalization lasted approximately two years, three months.

IT seems clear that the excellent production record in the iron and steel industry was of considerable weight in strengthening the hand of those who resisted nationalization. In terms of steel output per person, Great Britain ranked third behind the U. S. and West Germany. Given the British industrial base, it appeared that the industry was achieving optimum production.

In terms of technical efficiency, the British steel industry was operating at a high level. The war had made for delay of replacement and maintenance and had created some bomb damage, but the blame for this could not be placed at the door of private entrepreneurs.

The industry was having no serious labor troubles such as found in the field of coal. There were no labor problems here that were not being resolved by management and labor representatives.

Probably the most important reason that nationalization of the steel and iron

⁹ *Ibid.*, p. 353.

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industry was delayed and then retained for but a short period of time, is found in the resistance of those in the industry to nationalization. Without this active, aggressive type of resistance, it seems likely that the industry would have been nationalized sooner and this change would have been permanent.

The holding action of steel representatives, their united front to nationalization, their stern resistance, preserved the industry for private enterprise. Through their efforts there never was a general consensus that the industry was "ripe and overripe for public ownership and management in the direct service of the nation." The industry's opposition was in the nature of a cold douche to the heat of the nationalization program.

The *Economist* opposed the nationalization and noted American dislike for the nationalization of steel and cautioned the government to proceed with extreme care lest the Marshall Plan be jeopardized.¹⁰

Thus, nationalization of steel, without opposition of the *élan vital* of those in steel, would have gone as it did in the other target areas.

THIS is the British lesson which we in the U. S. should learn well. This is the truth which has been precipitated from the distillation process of the last decade. As Justice Holmes put it, "You needn't fear to handle the truth roughly, she is no invalid."

¹⁰ *Ibid.*, p. 400.

Competing with Ourselves

"AN industrial commission in Tennessee has been distributing an attractive little brochure entitled '14 Reasons Why Manufacturers Can Profit More in Tennessee.' Heavy stress is laid on 'low-cost' electric power from the Tennessee Valley Authority. Generally, the brochure says, TVA power rates are 30 to 45 per cent below the national level. It cites an example of a small northern manufacturing plant with a \$16,128 annual power bill that could be reduced to about \$8,000 in Tennessee.

"This caused the Anderson, Indiana, *HERALD* to run a long and significant editorial. The paper said: 'What the brochure failed to point out, of course, is that the remaining \$8,000 in the northern manufacturer's power bill would be paid by the nation's taxpayers—including the northern manufacturer. . . .

"The truth of the matter is that without the tax immunity that is a part of TVA's existence, it would be TVA itself that would have trouble competing because private enterprise has succeeded in producing electric power as cheaply if not more cheaply.' The *HERALD* concludes by pointing out that so long as TVA enjoys this tax-free status, the people of its community and all other Americans '... will find themselves competing with themselves in the battle for new industry.'

"If it is proper for a government agency to offer tax-free and tax-subsidized power, why shouldn't it offer tax-free and tax-subsidized factories, transportation, raw materials, and everything else? What, in all logic, would be the difference?"

—EXCERPT from *Industrial News Review*.



Desalting Could Be Just Around a Corner

Ocean brine and inland brackish waters may be freshened on a large scale in ten to fifteen years, say Interior Department engineers. And a "breakthrough" might come sooner. Industry will be the first customer, so utility and industrial engineers are advised to watch progress. A little government money has developed surprising results among private investigators.

By JAMES H. COLLINS*

FIVE years ago, out of his billions appropriated for atomic, military, and other research, Uncle Sam earmarked a tiny sum for the investigation of a somewhat Buck Rogerish field—the desalting of ocean brine, and brackish inland waters, of which there are vast supplies, not as heavily mineralized as sea water. It is the desalting of sea water that appeals to the popular imagination, but engineers knew that brackish waters, freshened, could magically increase supplies for communities, and agricultural purposes, and par-

ticularly for industries, with their diversified requirements.

The appropriation was only \$125,000, and it was made with stipulations not very common in federal research—that it was to be used, not for primary research itself, but to ascertain what private industry, and individual scientists and institutions were doing in this desalting problem. Ideas and suggestions were most wanted at that stage. For projects that showed promise of practical results, in future, a little government financial aid might be granted.

That we are running out of water has been shown in the rapid war and postwar expansion of our industries, and our

* Professional writer, resident in Washington, D. C. For additional note, see "Pages with the Editors."

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population, with its startling shifts from East to West, and from the cities to the outskirts and the towns.

We seem to be running out of other essentials, using up our high-grade ores, oil and natural gas, some industrial materials, our fresh air over cities, running out of money for financing industrial expansion, and community growth, running out of highways, and out of parking space—witness the interest in cosmic travel.

The requirements for factory water alone are now estimated at around 30 billion gallons yearly, to be doubled within a few years. Only 10 per cent of industrial water comes from public supplies. Industry itself finds the rest, and of such quality that it has to be treated for process and other uses.

LATELY, this threatening water picture has come to public attention, through actual shortages, and big projects for bringing new supplies to large cities. The public has read about it, heard it discussed in television panels, and as usual has come up with a simple solution.

There is plenty of water in the ocean.

Just take the salt out of it, and there you are!

Congress got to thinking about it several years ago, and wondered if anybody was doing anything about it. For instance—private enterprise. Similar problems recognized as needing future attention, such as solar energy, and high temperatures, had been explored by calling conventions of scientists and industrialists, with astonishing attendance—hundreds of specialists turning up to discuss them, and report research progress.

So, the lawmakers made a little appropriation for exploration purposes, and

turned it over to the Department of the Interior. Later on, the project was liberalized a bit, by authorizing some research in government laboratories, but all along the work has been on a restricted basis, and to date only a couple of million dollars have been appropriated all told.

But the results have been surprising. Out of the hundreds of ideas and suggestions received and screened, some have been found so promising that pilot plants have been financed, and are ready for field testing at oceanside, while contracts have been made for some dozens of researches that will advance desalting, and clean up "bugs" in good projects.

INTERIOR's engineers are conservative. The general expectation in the public mind seems to be that, some fine morning, an epoch-making discovery will be announced, and immediately desalted ocean water will be flowing out of the kitchen tap everywhere. But the thing is exceedingly complicated, predictions are dangerous, and Interior's engineers are adept at keeping their necks well inside.

But they do say that ultimate success can be counted upon, that within ten or twenty years desalting can be done on a mass scale, and that there is even a possibility that a "breakthrough" may come sooner, and bring down costs for millions of gallons daily.

More important, they say that the time has already come for engineers concerned with water problems to keep posted on progress, and to revise their ideas about water, whether industrial or for communities and agriculture. Present accepted cost figures on water have got out of line with reality. The true value of water, says David S. Jenkins, chief of Interior's

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Office of Saline Water, is not what we have been accustomed to paying for it, but the cost of its replacement. The "normal" value of water in future is likely to be higher than at present, or in the past. The department's investigations have shown that industrial water problems are diverse, and complicated—one of the immediate needs is a national survey of the needs and the supplies. And another important angle is the necessity for making the most of the fresh water we have, cutting down wasteful uses, developing reuses, and stopping the contamination of present supplies.

THE first step taken with Uncle Sam's money was the preparation of a brochure, "Demineralization of Saline Waters," that gathered all the information obtainable on the field.

This is an idea that goes far back. Some of the present-day research is along lines for which patents were taken out a hundred years ago, and the Greeks were interested in it, for German scholars have found that old Aristotle himself wrote about a closed vessel that, let down in the sea, would permit fresh water to pass inside, and keep the salt out. That was presumably a porous earthenware contrap-

tion, and simple enough. Whether it was ever tried is not reported, but it is not silly, after 2,300 years. Aristotle was one of those scientists, like Leonardo da Vinci, whose conceptions were sound, but far outran the technology of their times. Today, Aristotle would find the idea of his porous vessel being researched with Uncle Sam's money, in the form of desalting membranes.

Besides reviewing more than thirty different known processes, physical, osmotic, chemical, and electrical, the brochure described various forms of energy of possible value in desalting, and gave a bibliography of published material running back nearly forty years. It was distributed to thousands of scientists, institutions, and others likely to be interested, in this country and abroad. The purpose was to stimulate thought and invention, and bring out suggestions and ideas, finding projects with sufficient promise to warrant federal financial aid.

In the intervening years, more than 600 proposals have been received and screened, development contracts have been entered into with about fifty firms, investigators, and inventors, and a number of completed researches have been reported upon. Four programs have been instituted in Europe,



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each participated in by a number of nations, and individual research is under way in countries from Sweden to Australia. The Office of Saline Water is a clearinghouse for the results of these international activities.

SIX general fields of research were found to have possibilities that warranted support of private investigators and laboratories, including those of institutions. These are: (1) various forms of thermal distillation; (2) solar distillation; (3) osmosis; (4) electrodialysis; (5) freezing; (6) various chemical and other methods. Each field has its attractions and its difficulties, such as the problem of scale formation in thermal distillation, the large areas of land required by solar processes, with the variability of sunshine itself, the shortcomings of membranes, up to the present, for osmotic and electrodialysis processes, and so on. But in each of these general fields private investigators have been found at work, and with results that have justified financial backing for the building of apparatus, and assignments to research problems.

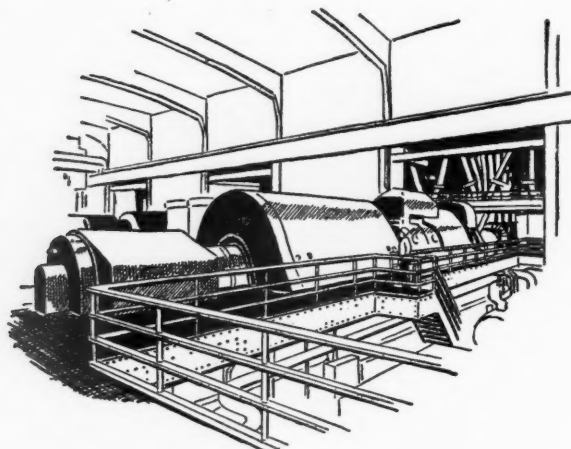
In all fields, demineralization boils down to costs, which are too high for all processes at their present stages. Roughly, the costs range from \$2 to \$5 per thousand gallons, which is too high for all except exceptional conditions in arid countries. Cost boils down to the price of power, energy, of whatever type, present or potential.

One simple illustration of the whole quest is given by Mr. Jenkins. Basically, a salt dissolved in water is separated into ions. If the salt is sodium chloride, the sodium ions will be positively charged, and the chlorine ions negative. The prob-

lem is to pull the ions and water molecules apart, for which power is needed, more power than has been applied in any of the methods so far developed. As with the familiar steam boiler, most of the power is wasted.

ONE of the distillation processes for which a 25,000-gallon-per-day pilot plant has been built with federal financing, ready for oceanside tests, is the Hickman rotary still, built by the Badger Manufacturing Company of Cambridge, Massachusetts, to the designs of Dr. Kenneth C. Hickman, of Rochester, New York, formerly research director for Eastman Kodak. This is regarded as an "exciting" new idea, for by means of a rotary drum, comparable to a boy's top, the rate of heat transfer is greatly increased by spreading brine out in a thin film. Distillation is done at low temperature, 125 to 150 degrees Fahrenheit, which causes little scale to form, a difficulty with higher temperatures. This type of apparatus would probably be limited in size and capacity, for demineralization of millions of gallons daily.

Another process of particular interest to utility executives, and with large volume capacity if pilot plant tests prove the principle, is a multiple-effect distillation process, invented by W. L. Badger, of Ann Arbor, a former University of Michigan professor. A pilot plant is ready for oceanside runs. Long-tube vertical evaporators of the type used in the salt industry are set up in series, and sea water passed through them under reduced pressure and temperature, to overcome scale formation. Exhaust steam from an electrical generating plant could be used—this is regarded as an important source



Power Needed for Desalting Water

"GREAT volumes of power—and cheap power—are going to be needed for freshening sea water on a scale to supplement our natural municipal, agricultural, and industrial resources. An interesting section of Interior's original publication dealt with possible energy sources. Immediately, nuclear power comes to mind, but at present is too expensive to be considered, although future reactors may supply waste heat for large-scale demineralization. Waste heat from steam and diesel plants, industrial as well as utility, is a possible source of inexpensive desalting power. This waste has never been estimated as to volume, and is believed to be large. Such power plants have very low efficiencies, seldom above 33 per cent, and there is undoubtedly room for increasing them."

of power for demineralization, and given the equipment, many utility companies would undoubtedly install it for their own fresh water requirements. Moreover, power companies might find themselves going into the water business, supplying industrial customers, at least.

Professor Badger estimates that, if the scale problem can be solved, a mass production plant with capacity of 17 million gallons daily could be built for about \$6

million. The Interior Department has set a cost limit of \$1.50 per thousand gallons. Such a plant, it is estimated, could yield fresh water at oceanside for 40 cents—less if exhaust steam is used.

NUMEROUS other distillation projects are being studied by researchers working with Interior, some of them in university and private laboratories, others with equipment companies. The equip-

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ment angle of successful demineralization is alluring. One "breakthrough" would certainly open up a field of manufacturing for different companies, effecting improvements on the process, and if past equipment is any guide, other processes would be brought to the commercial stage.

In Denver, Dr. George O. G. Lof, a consulting engineer, has developed a solar still that utilizes the ground as storage for solar heat, making it available when the sun is not shining. He estimates that such a still will produce one-fifth gallon of fresh water daily, per square foot of area, from brackish waters, at a cost of around 50 cents per thousand gallons.

ATEN-STAGE solar still, operating without power or machinery, using only sunshine, has been designed by Dr. Maria Telkes, of New York University. Single-stage solar stills operate by evaporating salt water under glass or plastic panes, the vapor condensing as fresh water. The Telkes still is a sandwich-like arrangement of absorbing and condensing layers. A black wick in sheet form, soaked with salt water, absorbs the sun's heat; evaporated water condenses to the next layer, giving up heat to warm it, producing five or six times as much fresh water per square foot of area as a single stage solar still. Low temperature heat from fuel can also be used in this still.

Solar stills seem to have limitations, being adapted chiefly to lands with abundant sunshine. They require large areas of space to collect sufficient energy, and there is doubt as to whether they will be adapted to large volume, for community supplies. But in typical solar still territories higher prices are paid for water than elsewhere, and these stills are of

prime interest to equipment manufacturers, because there is a wide market waiting for small household types. From the equipment standpoint, small solar stills might be something like room air conditioners.

ARISTOTLE's idea of filtering the salt out of Mediterranean brine is growing into quite a thing, under Uncle Sam's watchful eye. The Greeks knew nothing of electricity, and thought about filtering out physical particles of salt. That the problem was one of charged ions would not be discovered for a couple of thousand years. Today, the filtering is being done with plastic membranes, by osmotic processes that divide salty solutions, and by electrodialysis, which utilizes electric current. Several different principles are being researched, under contracts with scientists in this country, and by other researchers in Europe; tests are being run in arid regions, and the whole field is active.

Present difficulties are high costs, and inadequate membranes, stronger ones being needed, with longer life. Membrane processes are undoubtedly adapted to desalting of sea water, but at the present stage of development are thought of mostly in connection with brackish waters, and perhaps suitable for industrial purposes.

Two other processes are being investigated on their promise. One is the separation of salt from brine by freezing, and the other is chemical separation by dissolving in brine organic chemicals that do not dissolve salt.

Freezing has the present difficulty that some salt is trapped in the process, and satisfactory ways of separating it from

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the fresh water are being sought. Freezing is considered a field likely to yield results because, should a process be developed, the refrigeration industry has the large-scale equipment and the experience to bring about commercial use.

Chemicals for the solvent process must have very special properties. They have to be capable of absorbing large volumes of water, without losing their identity, and at the same time be nearly insoluble in water. Such a process would probably extract fresh water from brine, and release it with a temperature change.

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Waste heat from steam and diesel plants, industrial as well as utility, is a possible source of inexpensive desalting power. This waste has never been estimated as to volume, and is believed to be

large. Such power plants have very low efficiencies, seldom above 33 per cent, and there is undoubtedly room for increasing them. If a portion of electricity were used for compressors, and waste heat used for stage evaporation, many industrial plants might operate their own demineralization facilities. Research in this particular field is recommended, and also a national survey of waste heat.

With fuels, it is believed that cheaper power might be obtained by burning coal underground, and also by burning natural and other gases, including hydrogen itself, under water. These fields are earmarked for further scientific investigation.

SOLAR energy is coming up, and Interior engineers suggest that it might be used in three or more ways, of which evaporation is probably the simplest. Solar distillers either use sunlight direct, or use focusing devices. Single stage evaporation has been the rule, but multiple stage evaporation, reusing the energy, could bring down costs. Another technique could be the use of solar energy for refrigeration processes.

Considerable research and development work have been done on solar energy space cooling, and low-tempera-



Q "THE research projects actually approved by Interior are dozens out of hundreds of ideas submitted. Contracts for research and pilot equipment plants are mostly made with engineering and equipment firms, and scientists connected with collegiate or private laboratories. But the individual inventor's idea receives a hearing, and investigation, and if found promising, when measured by the department's screening procedure, may be investigated on its merits."

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ture, flame-powered refrigeration might be adapted. A third method would be the use of solar motors or generators, furnishing power for demineralization. Solar energy is very attractive because so much of it is going to waste, and it is found in regions where other sources of energy are lacking.

BESIDES the power showered upon this whirling planet by the sun, it is rich in untapped storehouses of power, and inexhaustible compared with fuels.

The oceans hold enormous energy in their waves and tides. Many inventors and a few scientists have studied wave energy, and a few small experimental plants have been built, generating modest amounts of electricity, on the principle of utilizing the compression power of waves, in natural caves, or compression chambers. Results are meager, possibilities considered worth further research. Tidal energy is being utilized in areas with high tides.

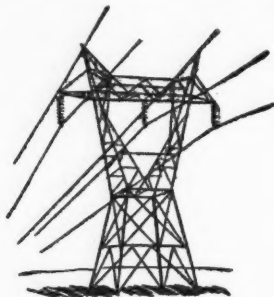
Temperature differences between ocean water at different depths, as well as in lakes and other inland waters, hold possibilities which have interested scientists for many years. Where warm water and colder water are available together, at different depths, it is possible to put the warmer water under reduced pressure, and use the colder water to condense the vapor; a turbine will convert the steam into electricity. Thirty years ago the French scientist, Georges Claude, identified with the introduction of neon lighting, built a small plant in Cuba, where the temperature differences were adequate, but variable ocean currents brought about failure. As a wide margin of temperatures is necessary, and stable conditions

throughout the year, this technique is regarded as suited to tropical areas. Differences of 28 degrees between surface and deep water on the West coast of Africa have led the French to build such plants, one on the Ivory coast having a capacity of 10,000 kilowatts and 150,000 gallons of fresh water daily.

ALSO worth consideration are differences in salinity of waters where rivers enter the sea, such differences creating a potential electrical supply.

The atmosphere contains stores of heat, as is being demonstrated by the heat pump, and while tapping it on a large scale is not yet feasible, this is a latent source of power considered worthy of research.

As inexhaustible as solar energy itself, and in reserve for the future, when fossil fuels will have been used up, is the geothermic heat of the earth's interior. Oil exploration is giving us new knowledge of these depths, the rate of increase in temperature with depth is constant, and harnessing of such energy is regarded chiefly as a technical and economic problem. It is being utilized already in small ways. Hot springs heat houses in Boise, Idaho, and Reykjavik, Iceland, and in Italy geothermic steam plants generate more than 125,000 kilowatts of electricity; New Zealand is exploring immense subterranean steam beds. These uses are naturally limited to regions with geothermic heat near the surface, but such energy could be harnessed anywhere by means of deep borings, and the circulation of water or other fluids to bring up the heat. This is another field in which it is believed that research might be concentrated.



New Sources of Heat

THE atmosphere contains stores of heat, as is being demonstrated by the heat pump, and while tapping it on a large scale is not yet feasible, this is a latent source of power considered worthy of research. As inexhaustible as solar energy itself, and in reserve for the future, when fossil fuels will have been used up, is the geothermic heat of the earth's interior. Oil exploration is giving us new knowledge of these depths, the rate of increase in temperature with depth is constant, and harnessing of such energy is regarded chiefly as a technical and economic problem. It is being utilized already in small ways."

ALL this research on processes, power, and prospects has raised a big question: Who are the customers for demineralized ocean and brackish waters, where will they want it, when, what quantity and quality?

The answer suggests Edison's saying: "We don't begin to know one-half of one per cent about anything."

Interior engineers have found that we badly need a national—even an international—survey of water requirements. The customers group roughly into community, agricultural, and industrial markets. They are all different in their demands, according to regions and their natural supplies. Some of the communities will need additional supplies of per-

manent character, others will need emergency supplies in drought such as came to the eastern states last summer, irrigation needs will be constant in some regions, of emergency character in others, freshened water may be poured into ground supplies as the best way of distributing it to other regions—and so on.

There is no overall "water picture" say the Interior engineers, but an array of requirements as diversified as the United States itself, and the first and most diversified need will be that of industry, where the first customers are going to be found, because industry can afford to pay more for freshened water as the costs come down. Also, there will be no single process suited to all industrial needs, but

DESALTING COULD BE JUST AROUND A CORNER

different processes, reaching the commercial stage, will be found adequate for different purposes.

Industry is already processing water, for many different purposes, from cooling to product ingredient. It is finding its own supplies, coagulating them, demineralizing, deodorizing, neutralizing flavors, tailoring water to fit. Demineralizing processes will be adopted by industry as they meet its requirements of quality and cost.

Because demineralizing processes are now regarded as approaching the "break-through" point, industrial engineers are asked to follow the researches in the interests of their companies.

EVEN public relations can be affected by demineralization, as is shown in the first commercial plant for the purpose set up to utilize sea water for steam raising. That is a utility plant, installed by the Pacific Gas and Electric Company, at Morro Bay, California. It is not operating on any of the demineralization processes still under research, but it is the most efficient plant that could be designed by company engineers, in co-operation with equipment engineers. Ten or fifteen years from now, perhaps sooner, it should be replaced by an actual demineralization plant of some type developed by present research, and undoubtedly with costs as the prime consideration.

Morro Bay is in San Luis Obispo county, about midway between San Francisco, and the Bay region served by the company, and Los Angeles. That location was selected on the basis of distribution to customers with minimum line losses. It had to be a steam plant—there were no hydro sites in the locality. With two tur-

bines of 150,000-kilowatt capacity each, it would need about 100 gallons of boiler water per minute.

There were two creeks nearby that might have been dammed, or wells could have been drilled down to ground water. But that would have been taking fresh water needed by the communities, and for irrigation. The consequences could be imagined by any public relations man. There would be bitter resentment, and organized opposition, and eventually prohibitory laws. Also, these people were all company customers.

WATER treatment was therefore the only resource, and the company installed two sets of evaporators for sea water, one for each turbine. Each evaporator has three cylindrical tanks, mounted horizontally, 17 feet long, six feet high, with 290 one-inch tubes in the lower half, set seven-eighths of an inch apart. Steam from the turbines themselves heats the tubes, sea water is passed over them, and boils; fresh water for the boilers is condensed at the top of the unit. The salt water, highly concentrated, is drawn off at the bottom and returned to a different part of the bay. Water is freshened to around 50 parts per million of mineralization. Costs are in the neighborhood of \$2 per thousand gallons. The Morro Bay plant has slightly higher operating expenses than other PG&E steam plants, but this extra cost is negligible when weighed against good will. And in the light of progress in desalting research the past five years it is unquestionably a temporary expense item.

Interior engineers state that fairly good estimates can be made of future community and irrigation requirements,

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but that there is hardly any information at all about industrial uses, the quantities, qualities, location, available raw water for treatment, and cost limitations on desalting processes. Plans are being laid to conduct a survey in the near future. Factors such as pollution, reuse of water, reduction of amounts of water needed, and other considerations, would be explored in such a survey. This survey ought ultimately to be international. It will be a market survey for equipment concerns, disclose the types of equipment needed, and the markets. Internationally there should be two kinds of demineralization customers, in countries not yet highly industrialized. There can be an appliance market in small units for households, and small communities. And as demineralization will transform arid regions, bringing them into cultivation, there will be large projects for engineering companies and contractors.

THE research projects actually approved by Interior are dozens out of hundreds of ideas submitted. Contracts for research and pilot equipment plants are mostly made with engineering and equipment firms, and scientists connected

with collegiate or private laboratories. But the individual inventor's idea receives a hearing, and investigation, and if found promising, when measured by the department's screening procedure, may be investigated on its merits.

A PROPOSAL for a demineralization idea, or a field of research that has bearing upon it, may be submitted by an individual, by letter or in person. If his idea is such that he does not want to reveal it fully, it can be discussed, and he will be given information that he needs to carry it further, or bring it in line with the general trend of research. If there are patent interests involved, perhaps in future, when his idea is further along, they will be protected as far as possible. The department seeks ideas, wants to utilize those that have merit, and if it rejects a proposal, to be certain that it is turned down on sound scientific or economic grounds.

When a formal proposal is made it must follow a pattern, based on the procedure of the National Science Foundation. A full description of the idea is required, with background information covering the experience of the persons



“INTERIOR engineers have found that we badly need a national—even an international—survey of water requirements. The customers group roughly into community, agricultural, and industrial markets. They are all different in their demands, according to regions and their natural supplies. Some of the communities will need additional supplies of permanent character, others will need emergency supplies in drought such as came to the eastern states last summer, irrigation needs will be constant in some regions, of emergency character in others, freshened water may be poured into ground supplies as the best way of distributing it to other regions—and so on.”

DESALTING COULD BE JUST AROUND A CORNER

who have evolved or worked on it. Should the idea be accepted for further investigation, cost estimates are asked for covering development work, and details of research or other facilities that the proposer may have.

IF the idea is approved for further investigation, one or more consultants are detailed to pass upon it from scientific, economic, and other angles. More than forty regular consultants are called upon, scientists, educators, executives, engineers, and specialists. If a consultant decides, after preliminary work, that some other specialist is better fitted to advise on the particular idea, he makes a suggestion to that effect. The co-operation of other government departments is available.

This procedure may appear formidable to the inventor with an idea, but is really in his interest, as well as conserving Uncle Sam's time and money. He may be shown that his idea needs further work, or be saved useless duplication in work, or learn about work in other fields that will help advance his idea. If Rube Goldberg brought in one of his fantastic cartoon inventions it would quite likely be treated with respect, for importance is attached to all ideas received, and to rating them "Stop" or "Go" on their scientific merits.

For example, if Aristotle came into Interior with his idea of a porous earthen vessel to filter out salt, he could be shown that two similar ideas are under consideration—one is a porous disk pressure device believed to be adaptable to desalting low salinity brines, and the other a pro-

posed research of natural and synthetic materials that might be satisfactory for the purpose.

The use of aluminum reflectors for solar stills has been proposed, and evaluated. They do not seem at present to offer any advantages over glass or plastic. But the history of invention is full of such ideas, once set aside, and subsequently found of value in the hands of later inventors.

AN inventor submitted data from a patent application on a method of using solvents to increase efficiencies in heat exchangers. He wanted to know what application it might have to the general demineralization program. It was decided that support was not justified, a conclusion of value to him as well as the Interior Department.

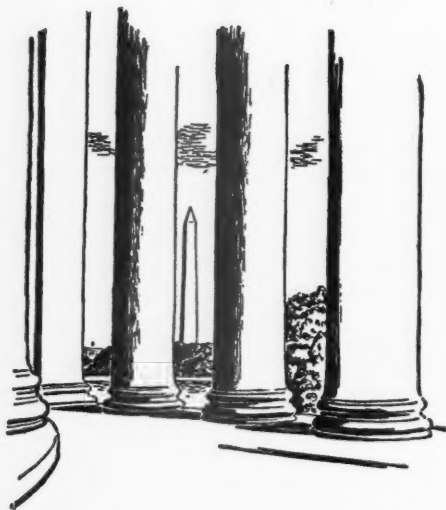
A proposal in the field of scale prevention was reported upon negatively because it was decided that the technique could not be tested in its present state. The inventor has undertaken further work upon it.

Such examples show how vast and complex the whole field is.

In five years, working on a modest scale, the scattered work of private people has been brought into focus, for an organized advance.

Utility engineers have a direct interest in further progress, because one or more of the demineralization processes now under test may prove applicable and economical to their water problems.

Quite conceivably, maybe in the near future, commercial desalting might be coming round the corner!



Washington and the Utilities

FPC Annual Report

ALTHOUGH it was limited to the fiscal year of 1957, which ended last June 30th, the thirty-seventh annual report of the Federal Power Commission contains some serious comment on the difficult position of the commission. The report covered the three full years since the celebrated Phillips Petroleum Company decision of June 7, 1954 (347 US 672, 3 PUR3d 129). In that decision the U. S. Supreme Court ruled that the FPC, contrary to its own interpretation of the law, must exercise regulatory control as to rates over independent producers of natural gas.

Twice Congress has passed legislation to overturn this view which, ostensibly at least, much of the industry feels is at war not only with some economic realities of natural gas production but also the original intent of Congress in seeking to exempt the producers and gatherers from the Natural Gas Act. Twice such bills were nullified by presidential vetoes. Once more a bill to relieve independent gas producers from the full control of the FPC has been launched in the present Congress.

Once more, thanks to some political bungling and maneuvering, the bill is likely to be sidetracked on other than its merits.

Where does all this leave the FPC? The answer, in terms of case load, would seem to be "in a mess." Although some of the jurisdictional procedures relating to the producers settled into more routine channels as commission rulings and court decisions began to establish landmarks in this previously uncharted area, many major problems remained unsettled and the work load continued to swell, with new filings—particularly rate increases—holding the agency's "inventory" of pending cases at high levels. This was true despite the fact that the commission disposed of hundreds of independent producer rate and certificate filings during the year and continued to speed up the processing of applications and other submittals.

THE commission's "pioneering" rôle in regulating the independent natural gas producers also was reflected in the number of court cases to which the agency was a party. During the 1957 fiscal year

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75 new cases involving the commission were instituted, nearly three times as many as in fiscal year 1954, when the Phillips decision was handed down. There were 27 decisions during the 1957 fiscal year disposing of 45 commission cases which had been pending in the courts. Many of these related to the scope and methods of regulation of the producers, and the commission's rulings generally were sustained—including one which held that its jurisdiction extended to wellhead sales of natural gas.

But the great number of proceedings arising from regulation of the independent producers was not the sole cause of the commission's pyramiding work load during this fiscal period ended June 30, 1957. There was also a sharp upsurge in rate increase filings by natural gas pipeline companies, with the number more than doubling the previous year's total and the cumulative dollar amount nearly quadrupling the level of fiscal 1956. In addition, the commission issued a record number of certificates to interstate pipeline companies during the 1957 fiscal year for the construction of facilities, as the transmission systems continued to add capacity to meet ever-increasing demands and to serve new areas of the United States. Major authorizations during the year included one for a pipeline system extending down through the heart of Florida to serve markets on both coasts of the peninsula.

As to the electric regulatory field, activities relating to the constantly growing electric power industry continued to command a vital share of the commission's attention, particularly in the licensing of hydroelectric projects. Other fields of activity remained at or near record levels, notably in the commission's work in fulfilling the accounting requirements of the

Federal Power and Natural Gas acts; in the processing of applications by electric utilities for the issuance of securities, and for mergers and consolidations; in the import and export of natural gas and electric power from and to the United States; and studies relating to the water-power potentialities of the nation's major river systems.

While faced with a critical shortage of personnel, the commission continued during the reported year to seek to improve its internal administration as part of its constant endeavor to perform more work, at no sacrifice to quality, by increasing the efficiency of its operations. The fact that the small staff additions made since 1954 do not begin to balance the vast increase in the amount of work accomplished attests to the success of this program. But despite these positive and successful steps the commission at the close of the fiscal year still was confronted with an extremely critical man-power and work load situation.

This 1957 fiscal report provided for the Congress a summary of the commission's work and accomplishments during the period; a look at the problems the agency has faced; a picture of what the increased work load has meant when translated into terms of pipeline mileage, new electric generating capacity, and the dollars and cents of rate filings; a study of the year's major developments in the electric power and natural gas industries; and a review of the effect of the commission's decisions, policies, and programs upon the regulated utility industry.

Regulation Loses a Round

To a disinterested observer, the federal regulatory commissions were revealed as more sinned against than sinning, from

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the standpoint of improper influence and pressures exercised by outside forces. This was the overall impact of the late February hearings of the House Subcommittee on Legislative Oversight, delving into the mysterious ways in which a Miami television license was awarded by the Federal Communications Commission. In the course of the charges and countercharges, ugly words such as "blackmail" and "pay-off" peppered the record and at least one commissioner was called on the carpet to deny or affirm charges that he was paid for his vote in this controversial case.

But in the course of the proceedings, which started off in a rather one-sided manner to "expose" White House and other administration pressure, the testimony began to involve Democratic Senators. This made the probe more bipartisan. It also gave the ranking minority member of the subcommittee, Representative Wolverton (Republican, New Jersey), a chance to register some indignation over what seems to be the common practice—of trying the cases for the record in front of the FCC and then trying to get a decision out of the back door of the FCC.

After one disappointed applicant for the Miami television station had testified that he had had 15 contacts made on behalf of his application, Wolverton said he was "shocked." But the Miami applicant simply implied that he had to do it in self-defense because his rivals were even more effective in that department—or so he thought. Even an outright political letter to the FCC, based on the party loyalty of an applicant for a television channel, was put into the record.

IN the process of the investigation, the reputation of the regulatory commission system has not been helped. It was by coincidence that two of the FCC members brought into the probe by the former

counsel, Bernard Schwartz, have state regulatory commission background. Already comment is being heard or written suggesting that state commission background may not be the best qualification for future appointments to such important federal regulatory commissions. Yet, President Eisenhower has picked more state commissioners for federal commissions than his two predecessors (Roosevelt and Truman) combined.

Before the present administration, such appointments were more often made on the basis of staff careers or political patronage. Due to the long previous tenure of the opposition party, however, the Eisenhower administration was not inclined to make many appointments from existing staffs. The elevation of state commissioners was the next alternative. On the whole, these appointments have proven quite satisfactory; but the Schwartz charges, by concentration, tend to put them in a poor light.

SOME criticism of commission regulation generally has come mainly from sources opposed to it for other reasons. From some government power bloc members in Congress and some leftish sources, questions have been raised as to the effectiveness of the regulatory commission system. With the failure of the subcommittee to develop much real foundation, so far, for these more sensational charges, it may be that confidence in the federal commissions as a whole will be left unimpaired. But so far the publicity has had mischievous, if not unfortunate, effects disturbing to those who believe in the prevailing system of commission regulation of private utility enterprise.

Senator Morse (Democrat, Oregon) has already introduced a resolution to create a Senate investigating committee to cover the same ground as the present

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House subcommittee. Other members of Congress, antagonistic to an industry subject to federal regulation, may be expected to take advantage of the doubts and suspicions raised by the present investigation.

Tax Ruling on Utility Advertising

EXPENSES incurred by private utilities for advertising campaigns directed against the concept of public power may not be included as a business expense in the income tax returns of participating companies. This ruling, handed down in mid-February by Internal Revenue Commissioner Russell C. Harrington, was the outcome of complaints from the congressional government power bloc against ads sponsored by "America's Independent Electric Light and Power Companies."

Nationally circulated ads designed to point out tax inequities and other economic disadvantages of such government projects as TVA and the proposed federal high dam at Hell's Canyon in Idaho, were involved. Harrington ruled that such advertising comes under the heading of expenditures incurred primarily for the promotion or defeat of legislation in the areas of political controversy. The Internal Revenue Service has consistently held that such expenditures may not be deducted from income tax returns as a business expense.

The announcement of the ruling came in a letter from Harrington to Senator Kefauver (Democrat, Tennessee), who last year prodded the Internal Revenue Service into investigating the propriety of the ads as a legitimate business expense. Several bills have been introduced at this session of Congress by public power proponents to accomplish the purpose achieved by last month's ruling. These

bills would also prohibit the FPC from considering such advertising costs of electric utilities as an operating expense for rate-making purposes.

THE attitude of the electric utility companies was that they should be allowed to use advertising to meet any competitor, even when that competitor is the federal government. Moreover, it was claimed the cost of such advertising should be deductible as an ordinary business expense.

Speaking for the Edison Electric Institute, Charles E. Oakes, chairman of the Pennsylvania Power & Light Company, attacked the ruling by the Internal Revenue Service disallowing write-offs of the cost of antipublic power advertising. Mr. Oakes declared that "in our mixed economy, nearly every industry is affected either by direct government competition or by government spending and tax policy, which tend to subsidize or otherwise benefit competitive industry. Further encroachment by government can only be prevented by an informed and aroused public opinion. This requires the use of communicating media such as advertising."

The utilities' spokesman cited the Hoover Commission, which had found, within the Department of Defense alone, more than 2,500 government facilities of industrial and commercial type and had said that government capital in them "probably exceeds \$15 billion." As of December 31, 1954, the Hoover Commission had found the government manufacturing clothing, paints, ice cream, and eyeglasses, repairing furniture, mixing cement, operating tree and garden nurseries, roasting coffee, and running airlines, steamship lines, and a railroad.

According to the Hoover Commission report, continued Mr. Oakes, such facilities pay little or no interest on the invested

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capital, seldom charge depreciation, pay taxes only in a few instances, and do not pay the fringe benefits of government personnel.

He continued:

This is the kind of information contained in the electric utilities' national advertising program, now under attack and now subjected to the penalty of loss of tax deductibility.

Advertising expense is most frequently incurred to assist in meeting competition, and such advertising is held to be a proper business expense both for corporate and tax purposes. It should make no difference whether the competition is from other business enterprises or from the federal government.

In the case of the electric utilities, it is recognized that they may properly spend money to advance their position competitively in the sale of electricity *versus* gas, and such expenditures are allowed for tax purposes.

Gas Legislation Languishes

ALTHOUGH the natural gas industry has been working overtime to offset the bad impression created by a Texas fundraising dinner on behalf of partisan supporters of the bill to ease federal regulation over independent natural gas producers, the chances for any such bill are darker than ever. Indeed, the lack of congressional enthusiasm engendered by the "Texas boner" for the Harris-O'Hara Bill to exempt producers from the FPC regulatory burden may even be extended to efforts on the part of the pipeline companies to obtain relief from the Memphis decision.

The FPC urged Congress in mid-February to enact legislation reversing a federal court decision in the Memphis case.

In its annual report, the commission specifically asked for new legislation that would permit a gas pipeline company to put higher rates into effect, pending FPC investigation, without obtaining in advance the consent of its wholesale customers. The U. S. Supreme Court, which has agreed to review the controversial decision, has been asked by the Justice Department to hear the case as soon as possible, preferably during the week of April 28th.

No legislation was promptly introduced in Congress to relieve the gas industry from the effects of the Memphis ruling. Congress is traditionally reluctant to take legislative action on matters pending on appeal before the high court. The FPC's request for legislation prior to a high court ruling suggests, however, that the commission is not optimistic about the final legal outcome of the Memphis case. It would doubtless prefer to see legislative action started now, even if the commissioners themselves are skeptical that Congress will act this year. If the decision is upheld, there would still be time at this session to pass the necessary legislation.

THE FPC chairman, Jerome K. Kuykendall, with the time element in mind, is seeking to impress upon Congress the serious effects of the Memphis ruling. In testimony before a House Appropriations subcommittee, the FPC chairman said the commission had the "worst backlog" of natural gas cases in its history. Part of the blame, he indicated, could be traced to the Memphis case. If the decision is upheld, he said, four cases already completed by FPC examiners would have to be dismissed. He stated that the commission may have to carry over as many as 60 cases next year, representing a work load of two and one-half years.

Telephone and Telegraph



Bell System Leads in Earnings

THE Bell system has emerged as last year's top money earner among free enterprise companies in the United States. In its annual report, the American Telephone and Telegraph Company showed earnings of more than \$75 million above those in 1956 for a consolidated net income of \$852,904,000. This new record enabled the corporation to recapture the title of leading profit earner from General Motors Corporation, which had held the distinction since 1947.

Total assets of the Bell system rose to \$17.6 billion, according to the annual report to stockholders by AT&T President Frederick R. Kappel. The report showed that total operating revenues of the Bell system rose to \$6,313,833,200 from \$5,825,297,685 in 1956. For the parent company alone, 1957 net income was \$686,057,956, against \$616,490,207 in 1956. System earnings on capital in 1957 were 6.7 per cent, against 6.8 per cent in the preceding year.

Net income of the Bell system was equal to \$13 a share on the average number of shares of the parent company outstanding last year, compared to \$13.16 a share on a smaller number of shares in 1956. At the end of 1957, there were 64,648,178 shares of AT&T stock outstanding in the

hands of 1,605,046 stockholders, against 62,893,889 shares held by 1,492,297 holders a year earlier.

Kappel reported capital expenditures last year of more than \$2.5 billion, against \$2.2 billion in 1956. The Bell system met its needs for capital funds with about \$1 billion from internal sources, including depreciation and retained earnings, and \$1.16 billion of new capital raised almost entirely from the sale of bonds. The bond financing included \$500 million in two issues of AT&T bonds, and twelve issues by subsidiaries amounting to \$600 million. The average interest cost on this financing was $4\frac{3}{4}$ per cent, a new high. At the end of the year the proportion of debt in total capital was 36 per cent, a figure that will be reduced by conversion into stock of the \$718.3 million convertible $4\frac{1}{2}$ per cent debentures now being offered to stockholders and the 7 million additional shares for sale to employees.

TELEPHONES in service at the end of 1957 totaled 52,252,494, against 49,437,917 at the end of 1956. The proportion of dial-operated phones was 91.8 per cent, against 89.5 per cent a year earlier. The average number of daily telephone conversations last year was 188,276,000, against 178,610,000 a year earlier. To

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handle this traffic the company had at the end of the year 10,339 central offices, against 10,038 at the end of 1956.

Long-distance calls increased 7 per cent in 1957, compared with a gain of 10 per cent in 1956. Opening of a telephone cable between Hawaii and the mainland was followed by a rise of 30 per cent in use. The rise for all overseas telephone service was 20 per cent.

KAPPEL reported that in 1957 the Bell system companies obtained rate increases amounting to \$104 million annually. Applications totaling \$125 million are now pending in 20 states and further applications will be made.

"The higher cost of money is only one of the reasons why the Bell companies have been requesting increases in telephone rates," Kappel said. He cited increased wages and rising costs in providing service as other factors.

Kappel stated:

... We are convinced that in the long run a public policy of allowing the telephone companies to earn well will produce better service at lower cost. There is in fact evidence that public utilities which have earned relatively well provide as good or better service at lower rates on the average than those which have had less chance to thrive. The fundamental is simply this: A business that is financially strong and healthy can afford to do the things that make for progress and economy. A business hampered by low earnings must resort to day-to-day expedients which in the long run are costly to all.

Kappel defended the giant size of the Bell system, largest investor-owned institution in the world. He said:

We are a big business and a growing one. We believe this is greatly to the

country's advantage, for what our growth really means is that we are making the telephone more useful to more people. It is no more than looking facts in the face to say that an abundance of good telephone service, low in cost and constantly improving—the fast, seemingly "easy" interconnection of millions of telephones—gains much from having a big, unified, nation-wide organization.

Only such an organization can coordinate the growth and improvement of a tremendously complex, ever-changing physical system, so that, for example, a telephone user in Phoenix or Hartford, with a few turns of the dial, in twenty seconds or less can be talking to someone in Boston—or St. Louis—or San Francisco.

IN manufacture, volume production of top-quality, standardized equipment by Western Electric helps keep down the cost of service to the user, Kappel said. In research, Bell Telephone Laboratories has the size and standing to attract topnotch scientists and engineers who can tackle big problems and provide pioneering technical leadership. Big investment is a necessity, he said, in the construction of telephone facilities; and, in defense, "the tremendous size of the telephone network gives the best assurance of maintaining emergency service under disaster conditions."

Kappel emphasized:

... our business must be big, not for the sake of size, but for the sake of service. What this demands is perfectly clear. It demands the utmost in responsibility—and how well the responsibility is met depends entirely on the competence plus the devotion of telephone men and women.

Competition Urged for Southern Bell

THERE are indications that the Louisiana commissioners are beginning to feel some "backfire" heat as the result of public advertisements explaining the position of the state's Bell system company, which has been ordered to cut rates instead of increasing them. Southern Bell Telephone & Telegraph Company was charged last month with conducting a "sitdown strike" in Louisiana. The allegation came from John J. McKeithen, a member of the Louisiana Public Service Commission, which for some time has been at odds with the company on the question of reasonable rates.

McKeithen told a meeting of the Louisiana Telephone Association last month that what Southern Bell needs most is strong competition. He openly encouraged independent telephone companies to take over areas which Southern Bell says it is not now able to serve, suggesting that the independents consolidate to become larger and stronger. McKeithen mentioned one locality where he said 800 families want service from Southern Bell "and can't get it."

He suggested that some of the independent companies consider moving into that and other such areas, and invited them to discuss the matter with the commission.

The major portion of McKeithen's talk was devoted to Southern Bell and its pending application for a rate increase. This has evidently annoyed the Louisiana commissioner. The company's advertising and public relations program was alleged to be directed towards bringing discredit on the commission and seeking to undermine public confidence in the elected members of the commission.

REFERRING directly to Southern Bell's pending rate case, McKeithen said he hoped the company would abide by the final decision, whether by the commission or the courts, and go ahead with the expansion needed in Louisiana. McKeithen's remarks indicated that he thinks the final decision in the current rate case will be made either by the high state court or the U. S. Supreme Court.

McKeithen was the second speaker at the association meeting. His remarks followed an address by New Orleans Mayor deLesseps Morrison, who expressed the hope that the "difficulties of Southern Bell" in its rate case can soon be settled so progress and expansion may be resumed.

Emergency Phone Route Planned

AMERICAN TELEPHONE AND TELEGRAPH COMPANY plans to build a \$4 million long-distance telephone express route between Kentucky and Georgia to assure communications in the event of a national emergency. The new route, to be built this year, will extend from Williamstown, Kentucky, to Waleska, Georgia. It will bypass all major industrial areas.

The direct express system will assure communications in the event an emergency knocks out facilities in a major city on the main microwave route between Louisville and Atlanta. Microwave towers and repeater buildings will be constructed in Tennessee near Jamestown, Crossville, Pikeville, and Cleveland. Williamstown, east of Louisville, is a junction point offering access to extensive communications networks throughout the northern part of the country. Waleska, north of Atlanta, ties in with major communications networks in the South.



Financial News and Comment

By OWEN ELY

Improved Regulatory Climate In California

IN this department, in the issues of September 27, 1956, and September 12, 1957, the regulatory picture in California was contrasted unfavorably with that in other areas, with the inference that this had increased the cost of equity financing for the California utilities. The average earnings-price ratios for four representative California companies was calculated at that time as 7.2 per cent, compared with 5.5 per cent for three Florida companies and 5.3 per cent for two Texas utilities.

The rate of return in the postwar period has averaged an estimated 10 per cent lower for California utilities than for the U. S. as a whole. Thus, during the six-year period 1951-56 California Electric Power and San Diego Gas & Electric both earned an average of only 5.3 per cent on invested capital according to Standard & Poor's calculations. Moreover, during 1957 the California utilities were adversely affected by rising costs more than utilities in other areas, especially as they were not permitted (as many other utilities were) to adjust rates automatically to offset sharp increases in the cost of oil and gas.

Since these articles appeared, there has apparently been some improvement in the regulatory climate in California, with

recognition of the need for better earnings and realization of the facts regarding "attrition" of earnings resulting from rapid growth, higher cost of plant, regulatory lag, and other factors. While of course the allowed rate of return cannot be considered the sole test of regulation, since the rate base and many other factors enter into the picture, nevertheless it is interesting to note that the commission has been recently allowing somewhat higher rates of return than in earlier cases. (See table, page 395.)

SEVERAL other rate applications are now pending before the California Public Utilities Commission. Without going into details, Pacific Gas and Electric is seeking a 6.8 per cent return on its gas operation, San Diego Gas & Electric requests a 6.5 per cent overall return, Pacific Tele-

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phone & Telegraph seeks a 6.9 per cent return, and General Telephone of California asks for a 7 per cent return on its telephone operation.

These rates of return allowed or requested in California do not seem to be on a strictly comparable basis with rates earned in many other states because of the fact that the commission's staff has proposed passing on to the consumers the deferred tax savings resulting from liberalized (accelerated) depreciation. It is true that the commission itself has not yet definitely indicated its viewpoint in the matter, pending its decision on the accounting for such depreciation. Nevertheless, in the Southern California Edison decision the company was requested not to normalize deferred taxes resulting from accelerated depreciation, and it appears likely that as a result the company will decide not to use accelerated depreciation in 1958 and later years.

IN the calendar year 1956 deferred taxes for Southern California Edison resulting from accelerated depreciation amounted to \$2,046,000, which was normalized by including it in the provision for federal income taxes. The amount in 1957 was probably substantially larger—possibly around \$3 million—since the construction budget for that year of about \$135 million was the highest in the company's history. Failure to normalize the tax deferrals would have the practical effect of offsetting about one-quarter of the rate increase; *i.e.*, allowing a smaller

amount of increased revenues to achieve the allowed rate of return. Thus the allowed rate of return would actually work out at about 6.04 per cent, and after attrition at about 5.92 per cent.

Even if the allowed return is taken as 6.37 per cent, this is not a very substantial improvement over the 5.9 per cent allowed in 1954 when costs were lower. It remains well below the returns of about 7 to 7½ per cent currently being realized by electric utilities in some other parts of the country where rapid expansion is being experienced, such as Florida, Texas, New Mexico, Arizona, etc.

THE common stocks of California utilities have joined in the general advance made by utility stocks since October. Five electric and gas utility stocks were selling on February 17th at prices which reflected an average gain of 22 per cent over the low prices of 1957, while the Dow-Jones utility average had registered a corresponding gain of only 16 per cent. Possibly the difference in these gains reflects the improved regulatory climate in California, as well as expectations that the pending applications for rate increases will also receive favorable consideration. Other things being equal, the California utilities which have received improved rates of return should now be in a better position to finance their large construction programs.

It is to be hoped that the commission's somewhat more realistic finding on rate of return was not merely a temporary re-

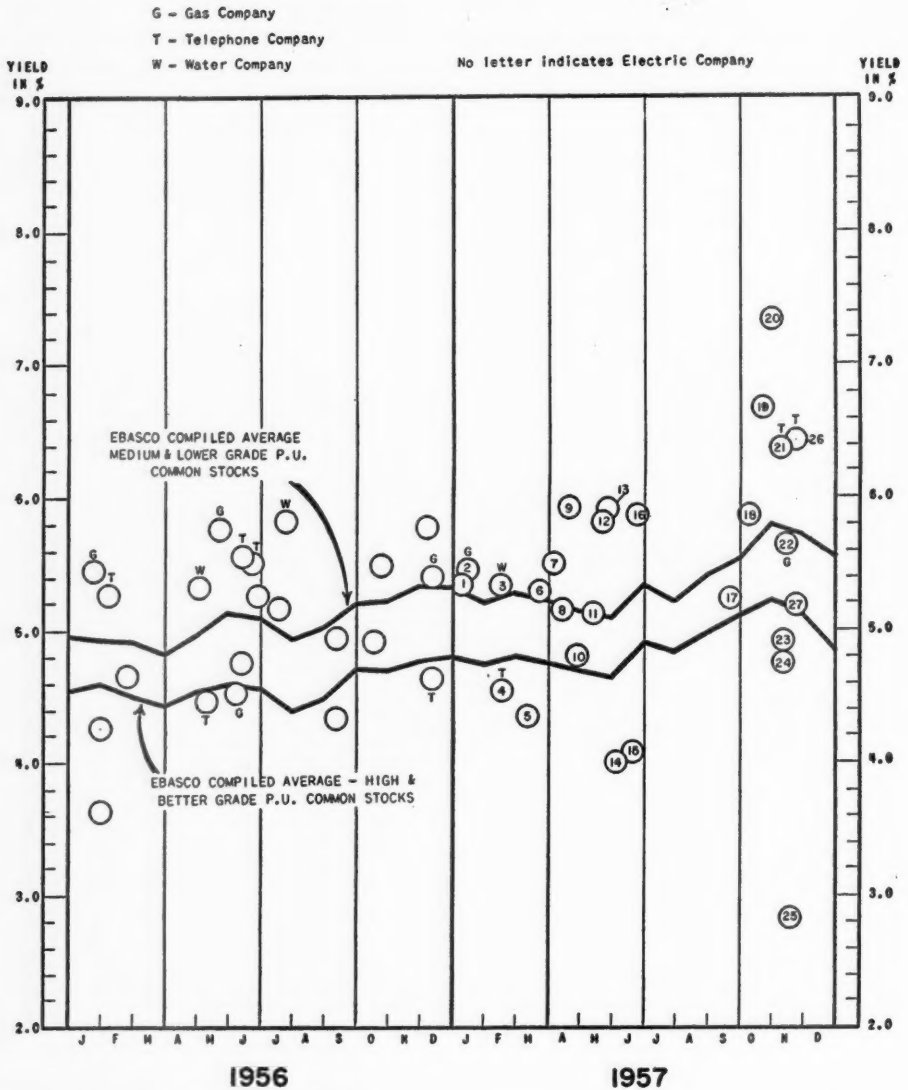


<i>Date of Recent Decision</i>	<i>Company</i>	<i>Returns Allowed in Recent Allowed for Test Period</i>	<i>Allowed for Attrition</i>	<i>Decisions Est. Future Return</i>	<i>Allowed in Earlier Decisions</i>
8/ 5/57	Calif. Water & Tel. (Monterey Water Div.)	7.13%	.63%	6.5%	6.0% (1955)
9/17/57	Southern Counties Gas ..	7.13	.63	6.5	6.0 (1954)
10/ 1/57	Southern Calif. Gas	7.25	.50	6.75	6.0 (1954)
10/15/57	Southern Calif. Edison ..	6.37	.12	6.25	5.9 (1954)

PUBLIC UTILITIES FORTNIGHTLY

PUBLIC UTILITIES

YIELDS TO PUBLIC ON COMMON STOCK OFFERED DIRECTLY IN 1956 AND 1957 (EXCLUDES SUBSCRIPTIONS)



Source, Ebasco Services Incorporated

MARCH 13, 1958

FINANCIAL NEWS AND COMMENT

action to the sharp declines in 1957 earnings experienced by some utilities in that state. While it is true that interest rates have declined somewhat, and that this may reduce the cost of senior financing as compared with last summer, nevertheless it must be kept in mind that renewed inflation remains "just around the corner." The cost of living index has just made its sharpest increase in five years, and employees of a large utility are reported highly dissatisfied with a proposed wage increase of $17\frac{1}{2}$ cents an hour. The government has already taken some steps which may lead to further inflation, and political considerations may force others. Utilities feel that they should have some protection *currently* against inflation—not after the damage has already been done.

It is to be hoped that—in order to maintain a fair level of earnings and facilitate financing of record 1958 construction budgets—the commission in pending decisions will at least maintain the higher level of rates of return allowed in the four cases already decided, and will not, as in some instances in the past, make substantial adjustments in rate base, in expenses, etc., which would tend to offset the higher percentage allowed.

Less Equity Financing For 1958 Scheduled

ACCORDING to Irving Trust Company's analysis of financing planned for March and the second quarter, the total amount for electric utility companies is expected to run about 9 per cent over last year's figure, setting a new record. Sales of mortgage bonds and debentures will be very heavy (see the calendar of anticipated issues on page 398) and may equal about 85 per cent of all financing. Three

utilities plan to sell refunding issues totaling about \$50 million. Moreover, there will be a substantial amount of preferred stock financing in the first half compared with last year.

Sales of common stock will aggregate only about one-fifth of last year's amount. It is possible that increased internal cash resulting from deferred tax savings may have something to do with this. Certainly from a stock market angle, this would seem to be a good time to sell common stocks.

Gas companies are moving slowly with financing plans because of regulatory uncertainties involved principally in the Memphis decision. Thus far, they are planning only about \$240 million of debt issues and \$60 million other financing in the next four months—the total being only about one-third of what was done in the first half of last year.

Statistical Report Form for Gas Utilities Revised

THE changes in the annual statistical report form for electric utilities (and in pages 1-4 and 11, 12 used jointly by electric and gas utilities) were described in this department in the January 2nd issue. The following will summarize the changes in the sections of the report (which bear a "G" in front of each page number) relating specifically to gas companies.

On page G-1, "Gas Production and Purchases," less detail is now shown for manufactured gas—the subdivisions for coal and coke, oven gas, oil gas, and carbureted water gas are eliminated. Footnote d gives new data on the various types of gas (natural, manufactured, and LP) used for enriching or mixing with the final product. In the table on page G-2 the dis-

PUBLIC UTILITIES FORTNIGHTLY

CALENDAR OF UTILITY OFFERINGS FOR MARCH, APRIL, AND MAY

<i>Date of Bidding Or Sale</i>	<i>Approx. Amount (Millions)</i>		<i>Method Of Offering</i>	<i>Moody Rating</i>
3/10	\$20	Merrimack-Essex Electric 1st Mtg. Bonds, 1988 ..	C-R	A
3/11	8	Indianapolis P. & L. Bonds	C	Aa
3/12	30	Mississippi River Fuel S. F. Deb., 1978	N	
3/12	13	Cincinnati Gas & Elec. Common Stock	S-N	
3/12	13	Cincinnati Gas & Elec. Pfd. Stock	N	
3/12	20	General Tel. of Calif. 1st Mtg. Bonds, 1988	C	A
3/18	20	Carolina Power & Light 1st Mtg. Bonds, 1988	C	A
3/19	20	Texas Eastern Trans. Bonds	N	Baa
3/20	24	Georgia Power 1st Mtg. Bonds, 1988	C	A
3/25	20	Florida P. & L. 1st Mtg. Bonds, 1988	C	Aa
3/25	30	New Jersey Bell Tel. Deb.	C-R	Aaa
3/31	30	Wisconsin Elec. Power 1st Mtg. Bonds	C	Aa
4/1	10	Idaho Power 1st Mtg. Bonds, 1988	C	Aa
4/1	10	Idaho Power S. F. Debs., 1983	C	A
4/9	15	Duquesne Light Bonds	C	Aaa
4/16	15	Mississippi Power & Light Bonds	C	A
4/16	1	Sierra Pacific Power Common Stock	S	
4/16	5	Atlantic City Electric Pfd. Stock	N	
4/16	4	Atlantic City Electric Common Stock	N	
4/22	50	Consolidated Edison Bonds	C	Aa
4/23	3	Sierra Pacific Power Bonds	C	Baa
4/23	10	Atlantic City Electric Bonds	C-R	Aa
4/23	10	Atlantic City Electric Bonds	C	Aa
4/23	15	Southern Counties Gas Bonds	C	A
4/28	20	Puget Sound Power & Light Bonds	C-R	Baa
4/28	10	Puget Sound Power & Light Bonds	C	Baa
4/29	40	Philadelphia Electric Bonds	C	Aaa
5/12	8	New Jersey Power & Light Bonds	C	A
5/13	15	United Gas Improvement Bonds	C	A
5/19	20	Gulf States Utilities Bonds	C	Aa
5/19	9	Gulf States Utilities Common Stock		
5/20	25	Illinois Power Bonds	C	Aa
5/21	22	Brooklyn Union Gas Bonds	C	A
5/	16	Public Service of Oklahoma Bonds	C	Aa
5/	3	Wisconsin Power & Light Pfd. Stock	N	
5/	6	Wisconsin Power & Light Common Stock	S-N	
—	6	Rochester G. & E. Common Stock	S-N	
—	30	Consolidated Nat. Gas Bonds	C	Aaa
—	25	Northern Nat. Gas Bonds	N	A
—	8	Otter Tail Power Bonds		
—	8	Oklahoma G. & E. Pfd. Stock		
—	15	Toledo Edison Bonds		A
—	17	Tampa Electric Bonds	C	Aa
—	13	New England Electric System Common Stock	S-C	
—	50	Commonwealth Edison Bonds	C	Aaa
—	10	Kansas P. & L. Bonds	C	Aa
—	35	Natural Gas Pipeline of America Bonds	N	
—	20	Montana Power Bonds	C	Aa
—	20	Texas Eastern Transmission Pfd. Stock	N	

*Preliminary or estimated. C—Competitive. N—Negotiated. R—Refunding. S—Subscription. S-N—Subscription, with negotiated standby underwriting.

FINANCIAL NEWS AND COMMENT

inction between fuels "used" and "purchased" is eliminated, these amounts being commingled, due to the decreased importance of manufactured gas. Statistics on the former lines 10-18 relating to solid and liquid fuels have been eliminated.

On page G-3 the table on "Daily Gas Availability and Requirements" has been rearranged, with less emphasis on manufactured gas. Capacity is divided between "regular production" and "peak shaving facilities," and there is more emphasis on withdrawals from storage (underground and local being distinguished). The column headings now read Minimum Day Sendout, Maximum Day Sendout, and Design Day Availability—these figures superseding the old data which merely analyzed Maximum Daily Availability. Thus there are now three sets of production statistics, with each showing the contributions made by regular production, peak shaving, purchases, storage, etc.

THERE is also a new table (Schedule G-8 on page G-3) covering details of underground storage operation, such as cushion gas, working gas, injections and withdrawals, etc. There seems to be little or no change in the big table G-11 showing the classification of customers, sales, and revenues, under (a) residential with heating, residential without heating, commercial, industrial (firm and off-peak), industrial interruptible, other ultimate consumers, and other gas utilities for resale; and (b) showing this data subdivided by natural gas and other types of gas and the total.

Schedule G-12, "Large Volume Sales and Use of Natural Gas," also remains unchanged, except that the number of customers in each of the 31 or more types of establishment have now been omitted, since major interest is in the sales and revenue data. It is now optional with the

individual companies as to whether this page should be sent to insurance companies and security analysts. The table on new securities issued during the year remains unchanged. Detailed data on taxes paid and on payroll statistics are primarily for the AGA and EEI, but can be distributed to analysts if desired by the company.

The new forms for the annual statistical reports of electric and gas utilities will, it is understood, be used for the coming five years before any major revision is again undertaken. These reports are an invaluable source of information to utility security analysts, and the companies realize the advantage of making them available to analysts.

Increasing Number of Partially Tax-free Utility Dividends

IT is generally known among investors and analysts that some of the former utility holding companies, now changed to investment companies, pay dividends which are entirely free of current income taxes—Electric Bond and Share, United Corporation, Central Public Utility, Standard Shares, and possibly one or two others. Perhaps it is less well-known that some fifteen electric utility holding and operating companies in 1956 paid dividends which were partially free of income tax.

Complete data are not yet available for 1957, but apparently several additional electric utilities paid dividends which were partly tax-free. This may perhaps be attributed to the increasing amounts of deferred tax savings resulting from accelerated depreciation, and as these savings continue to increase some new "borderline" companies may enter the list. On the other hand, some companies like Wash-

PUBLIC UTILITIES FORTNIGHTLY

ington Water Power, whose dividends enjoyed tax-free status because of accelerated amortization rather than liberalized depreciation, are now beginning to lose this benefit.

In general, for those utilities not affected by the expiring amortization on important plants, partially tax-free dividends may be expected to continue indefinitely, with the tax-free proportion of the total payment gradually increasing. Of course, the chance that Congress may cancel the provision of the 1954 Tax Code which provides for accelerated depreciation should be kept in mind. It is also understood that the Treasury Department is now scrutinizing tax returns more carefully with respect to claims for tax-free dividends, as estimated by companies.

Following is a list of utility companies (and investment companies) whose 1957 dividends are estimated by Sinclair, Murray & Company to be partially or wholly

nontaxable, or to constitute "capital gains":

Brockton-Taunton Gas
Calif.-Oreg. Power
Central Hudson G. & E.
Central Louisiana Elec.
Central Maine Power
Connecticut L. & P.
Connecticut Power
Detroit Edison
El Paso Nat. Gas
Electric Bond & Share
Equitable Gas
Greenwich Gas
Hartford Electric Light
New England Electric
New England Tel. & Tel.
Oklahoma G. & E.
Pacific Northwest Pipeline
Pacific Power & Light
Portland Gas & Coke
Providence Gas
Public Service of Indiana
Public Service of New Hampshire
Rockland Light & Power
Scranton-Springbrook Water Service
Southwestern Electric Service
Southwestern Public Service
Tennessee Gas Transmission
Transcontinental Gas Pipe Line
United Corp.
Virginia Electric & Power
Washington Water Power



DATA ON ELECTRIC UTILITY STOCKS

DATA ON ELECTRIC UTILITIES						Aver. Incr.			Approx.		
Annual Rev. (Mill.)			2/20/58 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% In- crease	In. Sh. Earnings, 1952-57†	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
\$284	S	American G. & E.	42	\$1.60m	3.8%	\$2.23De	9%	9%	18.8	71%	35%
46	O	Arizona Pub. Serv.	27	1.12	4.1	1.85Se*	13	13	14.6	61	31
11	O	Arkansas Mo. Power	18	1.00c	5.6	1.30Se	—	10	13.8	77	31
32	S	Atlantic City Elec.	33	1.40	4.2	1.80De	9	10	18.3	78	29
142	S	Baltimore G. & E.	38	1.80	4.7	2.33De	—	6	16.3	77	46
7	O	Bangor Hydro-Elec.	31	1.90	6.1	2.21De	D18	4	14.0	86	36
6	O	Black Hills P. & L.	25	1.44	5.8	2.11Oc	D6	3	11.8	68	30
99	S	Boston Edison	50	2.80	5.6	3.45De**	1	2	14.5	81	50
21	A	Calif. Elec. Power	15	.76	5.1	.97Se	3	16	15.5	78	36
21	O	Calif. Oreg. Power	32	1.60	5.0	1.87N	D18	5	17.1	86	33
8	O	Calif. Pac. Util.	27	1.60	5.9	2.33De	—	6	11.6	69	30
67	S	Carolina P. & L.	28	1.32	4.7	1.88Ja	15	4	14.9	70	40
30	S	Cent. Hudson G. & E.	16	.80	5.0	1.11De	1	6	14.4	72	37
23	O	Cent. Ill. E. & G.	31	1.60	5.2	2.43De	4	11	12.8	66	36
38	S	Cent. Ill. Light	53	2.60	4.9	4.10De	6	9	12.9	63	41
53	S	Cent. Ill. P. S.	33	1.68	5.2	2.48De	8	13	13.3	68	40
15	O	Cent. Louisiana Elec.	34	1.60	4.7	2.16De	5	8	15.7	73	30
38	O	Cent. Maine Power	23	1.40	6.1	1.83De*	1	5	12.6	76	34
128	S	Cent. & South West	45	1.70	3.8	2.47Se	D5	15	18.2	69	35
12	O	Cent. Vermont P. S.	15	1.00	6.7	1.04De*	D9	2	14.4	96	33
121	S	Cincinnati G. & E.	31	1.50	4.8	2.01De	1	9	15.4	75	41
7	O	Citizens Util. "B"	16	1.00a	6.3	1.17Se	5	10	13.7	86	42
119	S	Cleve. Elec. Illum.	38	1.60	4.2	2.64De	1	11	14.4	61	49
5	O	Colo. Cent. Power	29	1.32	4.6	1.76De	D5	4	16.5	75	33
44	S	Columbus & S. O. E.	33	1.60	4.8	2.57De	15	5	12.8	62	33
360	S	Commonwealth Ed.	43	2.00	4.7	2.85Se	5	8	15.1	70	44
13	A	Community Pub. Ser.	27	1.30	4.8	1.95De	7	6	13.8	67	45

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Annual Rev. (Mill.)	(Continued)	2/20/58 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% In- crease	Aver. Incr. In. Sh. 1952-57†	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
2	O Concord Elec.	41	2.40	5.9	2.67De**	D1	1	15.4	90	64
75	O Conn. Lt. & Pr.	19	1.00	5.3	1.21De*	D7	5	15.7	83	39
522	S Consol. Edison	48	2.40	5.0	3.44De*	7	6	14.2	70	40
221	S Consumers Power	49	2.40	4.9	3.30De	D1	5	14.8	73	47
74	S Dayton P. & L.	48	2.40	5.0	3.15De	D17	8	15.2	76	43
39	S Delaware P. & L.	48	2.00	4.2	2.77De	11	12	17.3	72	35
251	S Detroit Edison	39	2.00	5.1	2.61Ja	11	11	14.9	76	44
130	A Duke Power	31	1.40	4.5	2.07Se	13	20	15.0	68	52
99	S Duquesne Light	38	2.00	5.3	2.53De	4	4	15.0	79	35
31	O East. Util. Assoc.	32	2.20	6.9	2.35Oc	D11	0	13.6	94	34
2	O Edison Sault Elec.	16	.80	5.0	1.18De	10	24	13.6	68	33
14	O El Paso Elec.	23	1.00	4.3	1.40De	3	9	16.4	71	37
12	S Empire Dist. Elec.	22	1.20	5.4	1.49De	D6	2	14.8	80	39
5	O Fitchburg G. & E.	49	3.00	5.1	3.65De**	4	3	13.4	82	45
49	S Florida Power Corp.	59	2.00	3.4	2.78Se	1	19	21.2	72	36
131	S Florida P. & L.	60	1.40	2.3	2.98De	15	22	20.1	47	38
176	S General Pub. Util.	40	2.00	5.0	3.21De*	5	10	12.5	62	42
7	O Green Mt. Power	15	1.00	6.7	1.11De	D10	7	13.5	90	36
62	S Gulf States Util.	43	1.60	3.7	2.26De	2	11	19.0	71	34
49	A Hartford E. L.	58	3.00	5.2	4.33De	8	10	13.4	69	49
5	O Haverhill Elec.	34	2.40	7.1	2.67De**	2	—	12.7	88	100
24	O Hawaiian Elec.	46	2.50	5.5	3.12De	—	12	14.8	80	36
87	S Houston L. & P.	54	1.60k	3.0	2.75De	D2	11	19.7	58	46
8	O Housatonic P. S.	22	1.40	6.4	1.43De**	1	—	15.4	98	53
28	S Idaho Power	37	1.50	5.1	2.25De	3	12	16.4	67	36
87	S Illinois Power	32	1.50	4.7	1.95De	D2	8	16.4	77	37
46	S Indianapolis P. & L.	32	1.50	4.7	2.09De	1	7	15.3	72	39
20	S Interstate Power	14	.80	5.7	.90Se	D15	3	15.6	89	30
33	O Iowa Elec. L. & P.	29	1.50	5.2	2.00Oc	D13	10	14.5	75	31
41	S Iowa-Ill. G. & E.	32	1.80p	5.6	2.58De	7	3	12.4	70	42
39	S Iowa Power & Lt.	28	1.60	5.7	2.08De	2	4	13.5	77	37
34	O Iowa Pub. Service	16	.80	5.0	1.11De	1	8	14.4	72	35
14	O Iowa South. Util.	23	1.28	5.6	1.91De	5	5	12.0	67	37
61	S Kansas City P. & L.	42	2.00	4.8	2.94De	7	7	14.3	68	34
32	S Kansas G. & E.	31	1.40	4.5	2.36Ja	5	13	13.1	59	29
48	S Kansas Pr. & Lt.	27	1.30	4.8	2.05De	2	7	13.2	63	31
37	O Kentucky Util.	28	1.28	4.6	2.06Se	—	9	13.6	62	34
7	O Lake Superior D. P.	23	1.20	5.2	1.60Se	D5	6	14.4	75	38
110	S Long Island Ltg.	23	1.20	5.2	1.44De	D5	5	16.0	83	32
56	S Louisville G. & E.	29	1.20	4.1	1.83De	D3	3	15.8	66	41
9	O Madison G. & E.	46	1.80	3.9	4.28Se	NC	11	10.7	42	50
5	A Maine Pub. Service	18	1.12	6.2	1.34De	8	7	13.4	84	37
5	O Michigan G. & E.	49	1.60b	6.3b	4.04Se	D1	14	12.1	40	37
172	S Middle South Util.	39	1.70	4.4	2.41De	11	6	16.2	71	36
27	S Minnesota P. & L.	30	1.60	5.3	2.49De	19	10	12.0	64	36
3	O Miss. Valley P. S.	27	1.40	5.2	2.13De	D1	3	12.7	65	32
13	A Missouri Pub. Serv.	14½	.72h	5.0	1.02De	D2	9	14.2	71	29
7	O Missouri Util.	23	1.36	5.7	1.76De	D2	3	13.1	77	33
44	S Montana Power	47	2.00	4.3	3.79De*	5	8	12.4	53	37
142	S New England Elec.	16	1.00	6.3	1.17Se	D6	0	13.7	85	35
44	O New England G. & E.	17	1.05	6.2	1.50De	4	4	11.3	70	42
45	O New Orleans P. S.	42	2.25	5.4	2.84N	13	0	14.8	79	38
2	O Newport Elec.	17	1.10	6.5	1.04N	D22	4	16.3	106	30
89	S N. Y. State E. & G.	42	2.00	4.8	3.04De*	1	6	13.8	66	37
255	S Niagara Mohawk Pr.	32	1.80	5.6	1.91De*	D11	—	16.8	95	30
81	O Northern Ind. P. S.	40	2.00	5.0	3.02De	5	7	13.2	66	35
148	S Nor. States Power	18	.90	5.0	1.23De	2	4	14.6	73	35
9	O Northwestern P. S.	17	1.00	5.9	1.34Se	D10	3	12.7	75	26
136	S Ohio Edison	54	2.64	4.9	3.62De	D5	5	14.9	73	44
50	S Oklahoma G. & E.	43	1.90	4.4	2.57Ja	5	5	16.7	74	36
16	O Otter Tail Pr.	27	1.60	5.9	2.20De	2	1	12.3	73	34
501	S Pacific G. & E.	51	2.40	4.7o	3.41De	1	10	15.0	70	34
48	O Pacific P. & L.	32	1.60	5.0	1.99N*	D4	8	16.1	80	29
129	S Penn Power & Lt.	45	2.40	5.3	3.22De	D3	10	14.0	75	28
236	S Phila. Elec.	40	2.00	5.0	2.60De	1	4	15.4	77	43
36	O Portland Gen. Elec.	24	1.20	5.0	1.75De	1	6	13.7	69	36

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Annual Rev. (Mill.)	(Continued)	2/20/58 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% In- crease	Aver. Inc. In. Sh. Earnings 1952-57†	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
69	S Potomac Elec. Pr.	24	1.20	5.0	1.58De*	2	3	15.2	76	37
83	S Pub. Serv. of Colo.	48	1.80i	3.8	2.82Se	10	8	17.0	64	38
322	S Pub. Serv. E. & G.	32	1.80	5.6	2.22De	6	3	14.4	81	36
75	S Pub. Serv. of Ind.	38	2.00	5.3	2.71N	9	4	14.0	74	33
29	O Pub. Serv. of N. H.	17	1.00	5.9	1.36N	2	13	12.5	73	32
12	O Pub. Serv. of N. M.	17	.80	4.7	1.15Se	3	7	14.8	70	37
27	S Puget Sound P. & L.	28	1.36	4.9	1.82De*	9	16	15.4	75	61
60	S Rochester G. & E.	31	1.60	5.2	2.26De	1	2	13.7	71	35
19	O Rockland L. & P.	19	.90	4.7	1.14De**	8	15	16.7	79	30
8	S St. Joseph L. & P.	26	1.50	5.8	2.06De	14	8	12.6	73	35
54	S San Diego G. & E.	23	.96	4.2	1.38De	D9	D	16.7	70	40
8	O Savannah E. P.	21	1.00	4.8	1.36N	—	28	15.4	74	30
10	O Sierra Pacific Pr.	25	1.40	5.6	1.93De	3	12	13.0	76	30
217	S So. Calif. Edison	52	2.40	4.6	3.12De	D10	D	16.7	77	33
43	S So. Carolina E. & G.	24	1.20	5.0	1.55N	5	20	15.5	77	36
7	O Southern Colo. Pr.	15	.80	5.3	1.33N	3	9	11.3	60	43
255	S Southern Company	27	1.20	4.4	1.65De	7	8	16.4	73	32
19	S So. Indiana G. & E.	30	1.60	5.3	2.34De	23	2	12.8	68	36
7	O So. Nevada Power	20	1.00	5.0	1.50N	D2	15	13.3	67	34
1	O Southern Utah Power	17	1.00	5.9	1.44Oc	2	1	11.8	70	39
3	O Southwestern E. S.	21	1.24	5.9	1.77N	8	3	11.9	70	28
42	S Southwestern P. S.	33	1.48	4.5	1.77De	D1	5	18.6	84	35
30	A Tampa Electric	38	1.20	3.2	1.65De	D1	11	23.0	73	37
155	S Texas Utilities	47	1.60	3.4	2.56De	9	13	18.4	63	38
42	S Toledo Edison	13	.70	5.4	1.01De	—	—	12.9	69	31
16	O Tucson G. E. L. & P.	34	1.40	4.1	2.11De	4	15	16.1	66	35
129	S Union Elec. of Mo.	29	1.52	5.2	1.94De	14	12	14.9	78	35
33	O United Illuminating	25	1.30	5.2	1.60Se	2	7	15.6	81	48
5	O Upper Peninsula Pr.	28	1.60	5.7	1.79N	D14	10	15.6	89	37
43	S Utah Power & Lt.	28	1.20	4.3	1.80N*	6	9	15.6	67	43
130	S Virginia E. & P.	28	1.00	3.6	1.53De	10	15	18.3	65	38
28	S Wash. Water Power	40	2.00	5.0	2.45Ja	6	9	16.3	82	36
139	S West Penn Elec.	29	1.50	5.2	2.19De	2	6	13.2	68	32
64	O West Penn Power	53	2.40	3.8	3.29Se	1	13	16.1	73	33
11	O Western Lt. & Tel.	33	2.00	6.1	2.77N	D12	10	11.9	72	33
28	O Western Mass. Cos.	41	2.20	5.4	3.23De	5	8	12.7	68	56
114	S Wisc. Elec. Pr. (Cons.) ..	35	1.60	4.6	2.40De	D2	0	14.6	67	40
43	O Wisconsin P. & L.	26	1.36	5.2	1.98De	6	4	13.1	69	36
37	S Wisconsin P. S.	23	1.20	5.2	1.64Oc	D8	6	14.0	73	36
Averages				5.0%			8%	14.7	73%	
Foreign Companies										
203	S Amer. & Foreign Pr.	13	\$1.00	7.7%	\$1.73Se	D28%	2%	7.5	58%	47%
149	A Brazilian Traction	7	.53n	7.6	2.19De**	86	D	3.2	34	73
68	A British Col. Pr.	41	1.40	3.4	2.34De**	14	27	17.5	60	27
17	A Gatineau Power	31	1.50	4.8	2.28De**	15	15	13.6	66	32
35	O Mexican L. & P.	12	.50o	4.2	1.67De**	D7	62	7.2	84	46
13	A Quebec Power	29	1.40	4.8	1.99De**	15	14	14.6	70	52
54	A Shawinigan Water & Pr. ..	25	.68	2.7	1.42De**	22	26	17.6	48	39

*Deferred taxes resulting from liberalized depreciation are not normalized. **Calendar year 1956. †For companies which have reported calendar year 1957 earnings (for other companies the increase is for 1951-56). D—Decrease. A—American Stock Exchange. B—Boston Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. NC—Not comparable. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. a—Estimated annual rate. The "A" stock receives stock dividends. b—Also 3 per cent stock dividend December 31, 1956, which is included in the yield. c—Also 2 per cent stock dividend January 10, 1956. f—Also 5 per cent stock dividend August 15, 1956. g—Cash dividends of \$2.50 in 1956 included 30 cents extra; 10 per cent stock dividend also paid April 30, 1956. h—Also stock dividend of one share for each 200 shares held September 12, 1956. i—Also 10 per cent stock dividend November 16, 1956. j—Also 10 per cent stock dividend August 31, 1956. k—Also 5 per cent stock dividend December 17, 1956. m—Also 2½ per cent stock dividend January 10, 1956. n—Also 5 per cent stock dividend December 27, 1957. o—Also 5 per cent stock dividend May 1, 1957. p—Also 5 per cent stock dividend March 10, 1957.



What Others Think

Tax Benefits under Accelerated Amortization

THE Ebasco report, entitled "Certificates of Necessity for Electric Power Facilities—Federal Income Tax Effects Arising from Accelerated Amortization and Resultant Reduction in Interest," should once and for all dispel the claim made by the public power lobby that the private electric utility industry received tremendous benefits through the use of accelerated amortization under certificates of necessity.

With respect to the economic effects of the income tax deferral, the report noted that only the timing was different between the accelerated method permitted under § 168 and the more conventional method, such as straight-line, which are available to utilities. Pointing out that the interest-free loan is not a loan at all, the report went on to say:

However, the permissive deferral of a certain amount of taxes over a five-year period with prospective payment of increased taxes in equivalent amount during later years is economically similar to an interest-free loan, increasing step by step for five years and gradually being liquidated during the remaining life period.

The report noted significantly that the project owner, far from being relieved

from financial responsibility "... must provide at the start all funds required for construction and completion of the project. The tax deferral, or 'interest-free loan' begins to appear at the end of the first year, reaches a maximum at the end of the fifth year, gradually declines in subsequent years. The tax deferral represents a source of cash funds only in the negative sense that, under some other method for fixing tax liability, more cash expenditures for tax payments would have been required. For a comparative appraisal of tax effects, the amount of tax deferral as of any year can be considered to be the cumulation of the difference in annual taxes resulting from five-year accelerated amortization *versus* annual taxes with any one of the regular alternative depreciation methods allowable for tax deductions." The report stated:

An economic evaluation of this cumulation of differences in annual taxes requires two things: First, to be meaningful, the differences must be expressed in the same kind of dollars which the owner invests in the projects; *i.e.*, dollars available at future times must be expressed in terms of present worth as of project completion date; and, second, for the case without a necessity certificate, an alternative source

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must be assumed for cash equal in amounts year by year to the differences in taxes. The evaluations to be presented in this memorandum are on the basis that the alternative to cash tax differences will be differences in indebtedness; that is, that the alternative to an "interest-free" loan is an interest-bearing loan. It appears logical that this alternative source of cash should be taken as interest-bearing debt.

NOTING that the present worth computation is the only valid method to be used, the report went on to say:

An evaluation of tax deferrals on this basis can thus be made by the simple process of present worth summation of the annual interest, net after tax credit, on the alternative debt avoided by use of accelerated amortization for tax deductions.

Identical results are obtained by present worth summation of the annual differences in taxes, in one case with deductions for accelerated amortization, and in the other case with deductions for regular tax depreciation and for interest on alternative debt.

Evaluations from the aspect of interest saving to the owner from tax deferral and of cost to U. S. government of

funds equivalent to taxes deferred are similar except that cost of debt money to the owner would be estimated at a higher interest rate than cost of U. S. government borrowing.

An example of the relative evaluation of accelerated amortization *versus* the straight-line method or the sum-of-years digits method is shown in the tabulation below.

THESE exceedingly modest benefits to the project owner, not to mention the minimal cost to the government, have none of the marks of the great financial windfalls which the public power lobby is claiming for the electric utility industry. In this connection the Electric Consumers Information Committee in Bulletin No. 61 of October 29, 1957, makes the claim in Table I that the net benefit (subsidy) accruing over a 33-year period amounts to 47.374 per cent, compared to a true present worth saving of a mere 6.116 per cent.

Similarly, in Table II the so-called subsidy to a private power company having a project with a life of fifty years becomes 130.38 per cent, compared to a factual net interest saving to the owner of only 8.27 per cent, with a concurrent cost to the United States (using $3\frac{1}{2}$ per cent money) of only $6\frac{1}{2}$ per cent.



SAVING TO OWNER AND COST TO U. S. GOVERNMENT FROM USE OF ACCELERATED AMORTIZATION

Specific Case Assumed			
Economic life of project	30 years		
Cost of debt money to owner	4½%		
Cost of money to U. S. government	3½%		
Federal income tax	52%		
	<i>Per Cent of Certified Cost</i>		
	<i>Gross</i>	<i>Tax Credit</i>	<i>Net</i>
<i>Accelerated versus Straight Line</i>			
Present worth of saving to owner	17.42%	9.06%	8.36%
Present worth of cost to U. S.	15.08%	10.08%	5.00%
<i>Accelerated versus Sum-of-years Digits</i>			
Present worth of saving to owner	11.58%	6.02%	5.56%
Present worth of cost to U. S.	9.87%	6.60%	3.27%

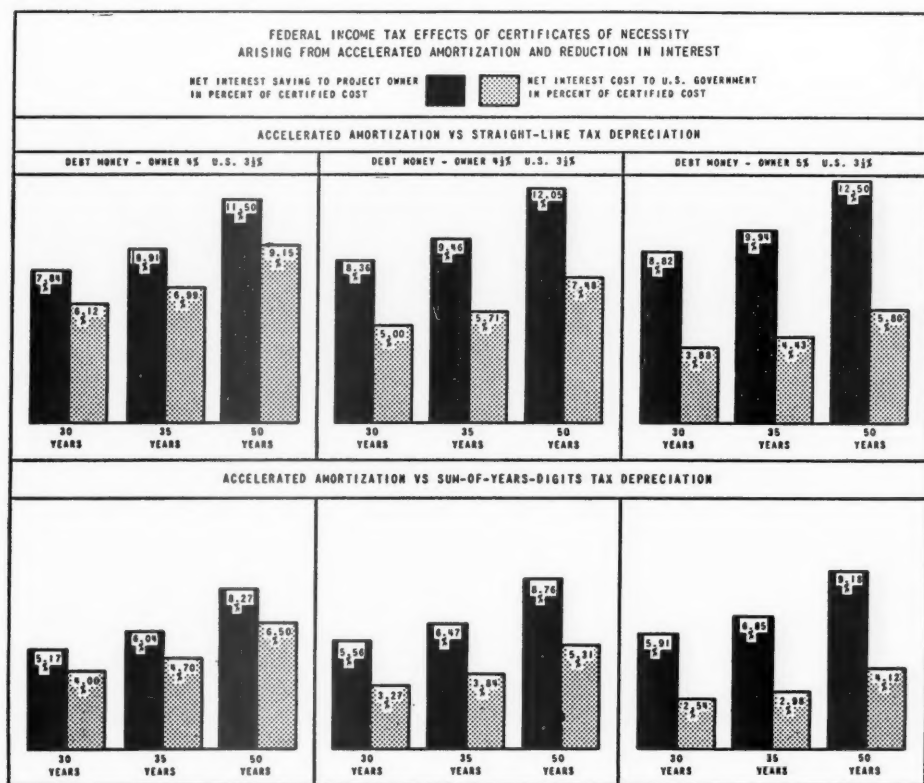
WHAT OTHERS THINK

The use of the compound interest method by the National Rural Electric Co-operative Association can of course produce any kind of a desired figure, however misleading and factually incorrect the answer may be. Using the same kind of a principle that the NRECA espouses, an individual could go to a bank, saying that the dollar which he had just deposited in his account is worth \$18.42 when compounded at 6 per cent over fifty years, and would the bank consequently credit him with that amount. The answer to such a suggestion may well be imagined!

In the stack chart shown below is a summarization of the net interest saving to the owners and cost to the United

States government under various assumed money costs and assumed life expectancies both for straight-line depreciation and the sum-of-years digits method.

AN important contribution which this report makes is in the economic evaluation of construction under the necessity certificates. The report points out that while there may have been cases where construction would have been carried out by the private utilities without the issuance of a certificate, nevertheless "... it is certain that the country's aggregate power development during the 1951-58 period would have been less had necessity certificates not been extended.



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Without the incentive or aid of necessity certificates some projects would have been constructed later, if at all, and some, even if built at the same time, would have been of less capacity."

The report went on to say that "The government's reasons for desiring such accelerated construction are generally understood to include the building up in the country's interconnected power network of substantial margins of reserve power capacity above foreseen demands of utility-type power loads, in order to:

1. Enable power systems to carry increased loads for defense production should a national emergency occur.

2. Enable power systems to contract in advance for large blocks of power supply to defense-supporting industries as an alternative to integral power facilities in the industrial plants. Such industrial power facilities would usually have cost more, would have been less efficient and flexible, would have imposed greater burdens upon the nation's economy, and might have required government financing.

3. Enable power systems, in event of war or a major emergency, to carry on for a number of years with the power capacity available when the emergency struck and with little or no increase during the emergency period.

"To accomplish such acceleration of power construction, the limited subsidy offered by accelerated tax amortization was made available. This acted as an incentive to an accelerated rate of power construction in two ways:

1. It made easier the raising of the abnormally large amounts of construction funds required for the accelerated program.

2. The net saving from the tax deferral offsets in some measure the unusual economic burdens involved in such accelerated construction.

"These economic burdens were expected to be, have been, and probably will be, of considerable magnitude. They include:

1. Higher cost of project due to construction during a defense boom period when construction materials were scarce and at times available on time only through the grey market, when factory deliveries of equipment were erratic and subject to possible paralyzing delay, when labor was scarce and labor relations often difficult, and when much overtime and other costly factors in forced speed of construction were inevitable.

2. Poorer quality and in some respects makeshift type of plant. Choice of power equipment was at times limited to what the manufacturers could turn out quickest and with least shop design and engineering. Use of inferior or ersatz materials and substitute types of construction were at times necessary. During the earlier portion of the period, in particular, the accelerated construction involved giving up advances in the art which could have been incorporated with more time available. With long-lived property, such as electric power stations, this effect would be a long-term burden, rectifiable if at all at serious expense.

3. Potential overdevelopment at the time of and following the time of completion. As of the end of 1957, and especially 1958, when numerous certified power stations come into operation, present forecasts show substantial excess capacity in U. S. power systems, excess capacity to such an extent that in many cases several years of normal

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"DON'T WORRY ABOUT HIM BITING YOU, HE'S BEEN VACCINATED"

load growth may be required for economic utilization. For an industry with an exceptionally high ratio of investment to revenue, carrying charges on investment in excess capacity can be a heavy burden.

“WHILE the aggregate of these economic burdens due to accelerated construction may well more than offset the savings accruing to the owners from tax deferrals, the excess capacity in the

United States power systems, viewed as insurance protection in the event of a major emergency, affords a basic contribution to national security.”

In view of the present danger from Communist aggression and the consequent need to maintain ample power capacity, the wisdom of the government in granting these small incentives to the electric utility industry can hardly be questioned.

—JOSIAH ADAMS

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Keeping Press Informed Pays Dividends

OCTOBER 31, 1957, will long be remembered as "black Thursday" by Northern States Power Company's operating department. That was the day on which a utility man's nightmare became a reality. As the result of a freak chain of circumstances that no one could foresee, NSP's main interconnected system literally "fell apart," causing an hour-long outage in Minneapolis and affecting communities within a hundred-mile radius.

More than a million people felt the effects of this service interruption that began shortly before nine o'clock in the morning. Radio and television stations went dead, newspaper composing rooms suddenly fell silent, factory production stopped, elevators quit running, traffic signals halted, homes were without heat, freezers began to thaw, and business activity came to a near standstill. An uncommon stillness descended on the community, but at NSP it went unnoticed amid the insistent jangling of telephones as the normal day's 8,000 calls jumped to 75,000.

As busy as any NSP phone that day was one which bypasses the company's switchboard and leads directly to NSP's information department. This phone's number is not to be found in the telephone directory, but it is known to newsmen in all Twin City newspaper, radio, and television offices. It was installed for just such emergencies as this. Busy reporters had complained that, during any serious outage, the company's switchboard immediately became swamped and it was impossible to learn the facts about what had happened in time to meet news deadlines. As a consequence, NSP installed a private line several years ago that provides a direct link between its information depart-

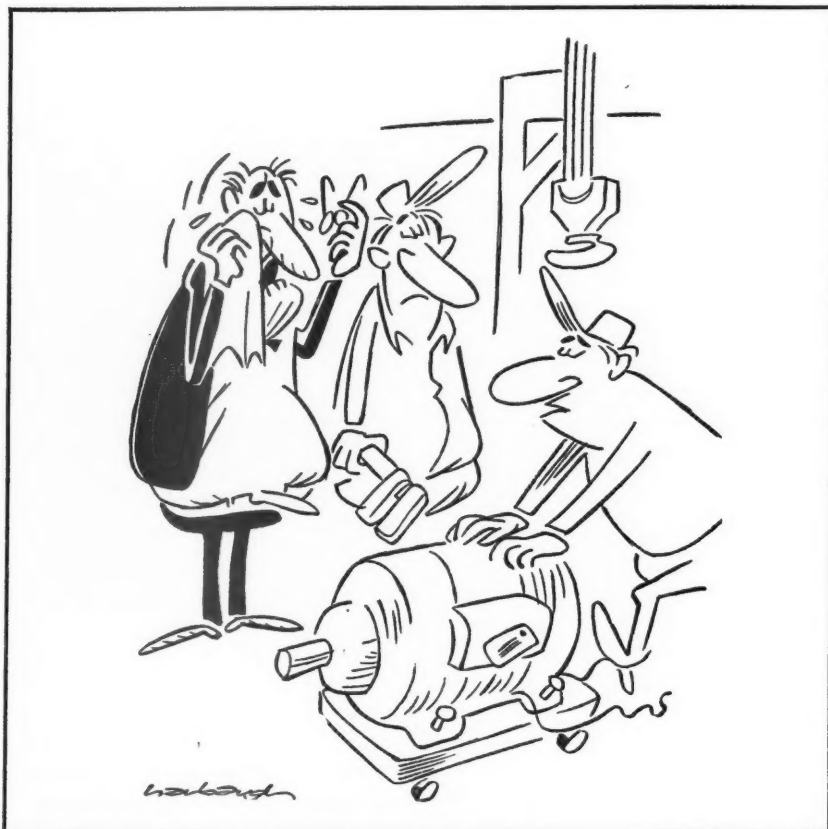
ment and all news media. Fortunately, it is not often brought into use—only in those rare emergencies that will happen even to the best run utility. At such times, it more than pays for itself by making possible quick communication when it is of vital importance to the utility that its story be told accurately.

This private telephone line is just one example of how NSP tries to co-operate with all news media and keep press, radio, and television informed of all matters of public interest. Reporters who used this line last October were all invited to come to NSP's general office where they could follow at firsthand developments as electric service was restored.

A NEWS conference was hastily arranged at 10 A.M., only about an hour after the break, at which more than a dozen reporters and photographers were present. The company's vice president in charge of operations briefed the group on what had happened and what was being done to restore service throughout the system. In addition, he gave three TV interviews and two for use on radio. Not all radio stations were able to send portable recording equipment to NSP's office and this same vice president, in the midst of his hectic efforts to supervise restoration of service, found time to make a couple of telephone interviews as well.

Interest in the "blackout" continued even after service was back to normal and a second news conference was called the same day for 2 P.M. Nineteen reporters and photographers appeared at this session, at which time NSP's vice president in charge of operations again answered all questions. Reporters and photographers were also shown through the load dispatcher's office where the intricacies of the

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"THAT MOTOR'S BEEN WITH ME OVER THIRTY YEARS"

interconnected system were explained. A dozen newsmen also visited the generating plant where the original fault occurred which isolated one of the largest plants from the system and caused other plants to trip out because of overload or be shut-down. Representatives from NSP's information department met reporters at the generating plant and answered all their queries. Photographs were permitted and newsmen were given the run of the place to talk to whomever they chose.

THE result of this "wide open door" policy toward reporters was a uni-

formly sympathetic coverage of a freak accident that inconvenienced a tremendous number of people over a wide area. Every news report commented on the infrequency of electric service interruptions and pointed up the brevity of this one and the area's dependence on electricity. The tone of these news dispatches set the tone of tolerant acceptance of the interruption on the part of the general public.

Typical of the comments appearing in the press was a *Minneapolis Tribune* editorial which pointed out how people in the area had missed "that little guy Reddy Kilowatt" during his hour's absence. The

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editorial concluded "in the kind of world in which we live, Reddy Kilowatt, poor little fellow, can't even take a coffee break." A television station borrowed a large wooden Reddy Kilowatt from NSP and opened its broadcast by showing a dejected Reddy with his head in his hands. At the conclusion of the broadcast Reddy was shown with his hands raised high and once more his smiling, confident self.

NSP's treatment of reporters during this outage was in no way different from its daily treatment of newsmen. The company operates on the theory that its customers are entitled to full information about its activities even when those activities are nothing more than a frantic scramble to restore service. Newsmen are the eyes and ears of the community they serve and as such receive prompt and courteous treatment from NSP personnel. An attempt is made to answer their every query and more often to anticipate their queries by providing answers even before any questions are formulated.

ONE of the things NSP learned as a result of its October outage was the need for a greater understanding, particularly on the part of newsmen, of how an electric utility operates. Realizing this, the company's information department called together a score of reporters and gave them a two-hour course on "what happens when the lights go out." The course included informal talks by operating department personnel, and tours of the company's load dispatcher office and the Minneapolis trouble board.

More than 200 news releases were issued by NSP's information department last year; an average of about one a day for every working day of the year. Some of these releases were of system-wide interest and were sent to the 200 weekly newspapers, the nearly 50 radio and tele-

vision stations, and the 17 dailies in NSP's service area. The company serves about 575 communities in Minnesota, Wisconsin, North and South Dakota.

Because of the large number of weeklies in NSP's service area, most news stories are scheduled for release on Wednesday or Thursday, the days on which most weekly newspapers go to press. By doing this the company gives the weeklies an even break with other media on its general news stories. Most of the dailies in NSP's territory are afternoon papers, which accounts for the fact that most of the company's general news stories are for afternoon release. Many of the news releases issued by the company are for a single publication only and thus carry no specific release date.

ONLY one of NSP's regular news releases is sent to papers in communities not served by the company. This is the annual story about the company's taxes which is sent to every newspaper in every county in which the company pays taxes. This adds about 150 newspapers to the company's regular news release circulation. Each of these releases features the "local angle" in the tax story, giving a breakdown of taxes paid by the company in each county.

Another general news story in which the local angle is uppermost is the company's annual release about its construction budget. That budget this year totals \$54 million and news media in each of the company's 13 divisions received a story itemizing expenditures in every community in the division.

NSP also frequently sends news releases to metropolitan newspapers outside its service area. These include news stories about the company's atomic plant, its annual report, annual meeting, tax payments, financing, and other items of pos-

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sible interest outside the area. Particular attention is paid to financial publications and newspapers read by investors.

MAINTEINING personal contact with members of the press throughout the company's widespread service area is a big job and one that gets a good deal of attention. All of the company's advertising appearing in the weeklies and nonmetropolitan dailies is brought to the newspaper offices by members of the company's sales department. These company personnel are on a first-name basis with all editors in their area and affairs of public interest about the company are frequently discussed in these informal meetings.

Members of the company's general office information and advertising department also keep in close touch with the editors and newsmen in outlying divisions as well as those in the metropolitan centers. Contacts are maintained through meetings in the various divisions, at which time the company is host to newsmen. Company plans and problems are discussed at these meetings, which usually end in lively question-and-answer sessions, during which an honest effort is made by company personnel to answer fully all questions asked.

Northern States Power Company's monthly employee publication, *NSP News*, is also sent to every editor in all communities served by the company. Re-

prints of stories about local company personnel give evidence that the magazine is regularly and thoroughly read by all editors.

The company's annual report and quarterly bulletins are also sent to all editors as a matter of course. A news story summarizing the high lights of the annual report accompanies the copy of the report sent to weekly newspaper editors, radio and television stations.

NORTHERN STATES POWER COMPANY'S management is acutely conscious of its duty to the public it serves. It knows that its first duty to its customers is to provide the best possible service at the lowest cost consistent with sound business principles. The company feels that its corporate life should be an open book and that its customers, stockholders, and anyone having a genuine interest is entitled to information about the company's firm plans for the future, its day-to-day operations, and other company activities affecting the public. The company has found this policy pays dividends in greater public understanding and appreciation of its problems and that it promotes a friendly atmosphere that builds confidence in the company's ability to serve the community well.

—RICHARD D. FURBER,
*Director, information and advertising
department, Northern States
Power Company.*

What Can the Weather Do to Net Income?

FOR a gas distribution company, can the total effect of weather on revenue and on expense be approximated? Are variations of 5-10 per cent in degree-day deficiency important in terms of net income? The answer in both cases is "Yes." Following is one "short method" of estimat-

ing the approximate effect of temperature on net income; other methods can be used:

It will be assumed that variations in sale of gas for space heating primarily reflect changes in degree-day deficiencies. While wind, per cent of possible sunshine, and similar factors have an effect, these

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are not here considered material. The following income statement for the mythical K.A.P. Gas Company reflects a normal year as far as degree-day deficiency is concerned:

K.A.P. GAS COMPANY ABBREVIATED STATEMENT OF INCOME, YEAR ENDED DECEMBER, 1957

Operating Revenues	\$10,000,000
Total Operating Revenue Deductions..	8,700,000
Operating Income	\$ 1,300,000
Income Deductions	250,000
Net Income (Normal)	\$ 1,050,000

To prepare a standard approximation of the effect of variation in temperature the following method will be used: (a) The total amount of revenue attributable to space-heating load is estimated, excluding that load which does not vary directly with air temperature. Excluded here would be processing loads, residential cooking or water heating, and similar loads. For this example, \$5 million represents revenue from space heating. (b) The *relative* increase in revenue with an increase in marginal heating sales must be approximated; marginal heating sales are defined as space-heating sales immediately below or above the sales resulting from normal weather. Since marginal therm sales occur beyond the beginning rate

blocks, the relative effect on revenues always is *less* than the relative change in therm sales. This relationship is indicated by the ratio of marginal unit revenue to average winter heating revenue per unit of sale. For example, assume that average net winter heating revenue for the K. A. P. Gas Company is 11 cents per therm, with marginal revenues per therm approximately 9.9 cents. The ratio of 9.9 cents to 11 cents is .90. Thus, a 10 per cent increase or decrease in marginal therm sales will result in an increase or decrease in revenue of 10 per cent multiplied by .90, or 9 per cent. (c) Finally, the relationship of marginal *gas cost* and marginal heating revenue must be estimated. Gas cost depends on the supply contract, the source of gas used to meet marginal demands during the winter, and variations in the proportions of gases used to meet these demands. For example, two types of manufactured gas plus withdrawal from underground storage are used by Laclede Gas Company to supplement natural gas taken from the supplier. The proportions to be used cannot be predicted with certainty, but can be approximated on the basis of the plan for meeting daily send-out requirements. Marginal heating revenue per unit sold will vary from month to month, depending on the rate schedule; an average marginal

K.A.P. GAS COMPANY ESTIMATED EFFECT OF TEMPERATURE VARIATION

	<i>If Temperature Is 10% Colder Than Normal</i>	<i>If Temperature Is 10% Warmer Than Normal</i>
Increase (decrease) in operating revenues	\$450,000	\$(450,000)
(9% x \$5 million)		
Less: Increase (decrease) in cost of gas	150,000	(150,000)
(based on a marginal gas cost which averages 30% of marginal heating revenue)		
Less: Increase (decrease) in taxes (deduct)	165,000	(165,000)
(based on a 55% rate to cover income taxes and gross receipts taxes)		
Increase (decrease) in operating income	\$135,000	\$(135,000)
Increase (decrease) in income deductions	0	0
Increase (decrease) in net income	\$135,000	\$(135,000)
Per cent of normal net income	13%	(13%)

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revenue for the heating season suffices for an estimate of this type.

ASSUMING that variations in temperatures and concomitant variations in degree-day deficiency cause all variations in sales for space heating, a change (from normal) of 10 per cent in degree-day deficiency will cause a 10 per cent variation in therm sales, or a 9 per cent variation in heating revenue. The table on page 412 indicates the method of approximating the effect on income.

While it is recognized that the effect on gas cost is not equivalent in warmer weather to that in colder weather, the effects are similar. Each company is in a position to detail its calculation to fit the situation encountered. The principles of estimation are the same.

Laclede Gas Company has been interested in this specific problem since conversion to natural gas in 1949 and the increasing emphasis on space-heating revenues. In the eight years since conversion to natural gas, degree-day deficiencies in this area have shown a variation ranging from 8 per cent warmer than normal to 12 per cent colder than normal. (Detailed methods for estimating the effect of weather on net income have been determined and are regularly used.)

THE increasing dependence of the gas industry on revenues derived from space heating is causing wide fluctuations in net income. Income exhibits in part the variability shown by the income of general industrial corporations; weather-caused income variations of plus or minus 10 per cent will be common in the near future. The following conclusions can be drawn:

1. Dividend policy cannot afford to ig-

nore the wider variations in income. Some gas companies will find it expedient to establish a basic annual dividend and to supplement this dividend with extra payments reflecting results of the specific year.

2. Bond interest, as a matter of standard practice, is kept sufficiently low so that payment can be made under the worst possible business conditions. An additional allowance will be necessary as a margin of safety inasmuch as the worst business conditions may be accompanied by extremely warm weather. A combination of the two would cause a telling decline in net income of companies with a large heating load.
3. Any utility with a significant amount of revenue from space-heating load must emphasize "normal" conditions in rate case work. It is as unreasonable to expect a rate increase to compensate for warm weather as it is to demand a rate decrease based on the fact that a particular winter was extremely cold. This will create certain problems for commissions and for utility management, problems both of definition and of measurement.
4. Financial analysts, already aware of the problem, will become increasingly dependent upon information not ordinarily shown in an annual report or prospectus. Comparisons of net income will be significant only if the weather has been taken into account. Forecasts of net income will continue to be based on normal weather.

—D. E. PAUL,
Statistician, Laclede Gas Company.



The March of Events

Strauss Announces Proposal

CHAIRMAN Lewis L. Strauss of the Atomic Energy Commission last month deferred recommendations on the scope of the government's program to speed production of electricity from the atom but announced an important proposal by a private electric company.

Strauss advised the congressional Atomic Energy Committee that the Pacific Gas and Electric Company is ready

to build an atomic power plant at Humboldt Bay south of Eureka, California, which is designed to produce economically "competitive" nuclear power. The AEC chairman read a telegram from N. R. Sutherland, president and general manager of the West coast utility. Sutherland said the plant, expected to produce about 60,000 kilowatts of electric power, would be built without "financial assistance" from the government.

Alabama

Transit Bid Rejected

MAYOR James W. Morgan last month officially rejected a proposal by a Tulsa transit company to set up a new bus system in Birmingham. The mayor told the president of the MK&O Transit Lines that the Citizens Advisory Group and the Downtown Improvement Association had advised the city commission to turn down the proposition on grounds that the \$1 million loan sought by the Oklahoma company from Birmingham sources would not be "adequately secured."

It was also learned recently that Bessemer officers had turned down an offer by the officials of the Birmingham Transit Company to sell that company to the cut-off city under the same terms it previously had made to the city of Birmingham.

At a meeting held last month owners of the BTC agreed to try to keep their company in business for at least another twelve to twenty-four months, provided certain conditions are met, including fare increases and steps to eliminate downtown traffic congestion.

Illinois

Bus Fare Hike OK'd

AFIVE-CENT boost in adult cash fares and inauguration of token sales have

been authorized for the La Grange-La Grange Park Transit Company. In granting the tariff adjustments last month, the

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state commerce commission set a March 1st starting date.

The west suburban bus line was one of the last in the metropolitan area with a 15-cent cash fare between towns. Under its new schedule, riders will pay either 20 cents or purchase tokens at two for 35

cents. Children's fares will remain the same, 10 cents cash or 10 tokens for \$1.

The company's general manager said the increase was necessary because of rising expenses. The commission granted the request without holding public hearings.

Kentucky

Gas Rate Raise Asked

LOUISVILLE GAS & ELECTRIC COMPANY recently asked the state public service commission to approve a \$167,145-a-year increase in its natural gas rates, effective May 1st, to offset a similar increase in the price of wholesale gas. The new increase would cost the average customer who uses gas for cooking and water heating about 1.2 cents a month, the company said. Gas for heating would cost customers an additional 5.8 cents a month.

For the 70 per cent of the company's

residential customers who use gas for all three purposes, the additional cost would average about 7 cents a month or 84 cents a year, it was estimated.

The company made the present application under an escalator clause approved by the state commission last fall. This clause allows the company to avoid a full-scale commission rate hearing whenever its wholesale rate is increased. The commission last November gave Louisville Gas & Electric an increase in gas rates estimated to produce \$1,530,606 in annual gas revenues.

Louisiana

Loses Appeal on Bus Bias

THE United States fifth circuit court of appeals recently outlawed segregation on city buses and streetcars in New Orleans. The action affirmed a decision by Federal District Judge J. Skelly Wright. The judge previously had granted an injunction that barred officials

of the city and of New Orleans Public Service Inc. from enforcing segregation laws.

In a brief opinion, the appeals court said the case was controlled by the one in Montgomery, Alabama, that had been affirmed by the United States Supreme Court.

Nebraska

Governor Backs Oil, Gas Regulation

GOVERNOR Vic Anderson recently placed himself behind passage of a "reasonable" oil and gas conservation law in Nebraska. "We are getting to the point where we should try and get some conservation legislation," the governor said.

Two efforts aimed at placing a petroleum conservation law on the books have been unsuccessful in Nebraska. In 1955 a conservation bill failed to get out of committee. In 1957, an effort to raise the bill on the floor was quashed when two of the men initially supporting the measure opposed the bill.

Historically, the "majors" in the Ne-

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braska oil industry have been for regulations directed at getting conservation while independents have been against the concept.

An interim committee created by the last legislature to study possible oil and gas conservation has held one meeting and plans April sessions in Sidney and Kimball. Governor Anderson said he does not feel any proration feature should be written into a conservation law "at this time."

NPPS to Reorganize

REOrganization of the Nebraska Public Power System will be undertaken shortly after April 1st, according to D. J. DeBoer of Columbus, executive manager of the system.

NPPS, a contractual union of the Platte Valley and Loup River Public Power districts, has long been criticized for its present organization. Directors of the group pledged last year that it would be overhauled.

DeBoer told the Nebraska Rural Electric Association, meeting last month in Lincoln, that reorganization will be the "No. 1 project" of the NPPS as soon as a new contract with Consumers Public Power District is completed about April 1st.

No state power interest can afford to delay reorganization of the system "if we are going to build a strong public power program in this state," DeBoer declared. He explained that the Loup District now is conducting engineering and economic studies on reorganization.

Virginia

Committee Passes Utility Bills

Two bills which would exempt utilities from having to pay for relocating their facilities along the state's new interstate highway system in cities and towns cleared the senate roads committee last month. The measures provide that this cost would be designated as a part of the construction itself. By doing this, the state could be reimbursed by the federal government for 90 per cent of the cost of moving the utility facilities.

The state would pay 10 per cent of the cost. This has been estimated at \$750,000 over the total construction period for the interstate system. If the utilities paid the cost, the figure would be roughly \$7.5 million. Utility spokesmen argued at a committee hearing that they probably would have to ask for rate increases if they were required to foot the bill alone.

The bills as originally drawn would have required the utilities to pay for removing their facilities along the interstate rights of way.

West Virginia

Commission Fails to Get Funds

IN explaining why the state senate finance committee had killed a bill that would have given the state public service commission about \$150,000 in additional funds annually, Senator Glenn Jackson, Logan Democrat, committee chairman,

said most members of the committee believed that all functions of the commission should be thoroughly studied before the agency is given more money.

The proposed additional money would have been used for hiring professional personnel to help the commission investigate rate cases.



Progress of Regulation

Trends and Topics

Exemption from Competitive Bidding Requirements

THE merits of compulsory competitive bidding for new securities have been argued for many years. Before the adoption of Rule U-50 by the Securities and Exchange Commission, William O. Douglas, then chairman of that body, urged the adoption of competitive bidding to "mitigate the practice of having the banker on both sides of the bargain." But along with the question of the power of investment bankers, regulatory authorities have been particularly concerned with the fundamental consideration of economy to the issuing corporation.

Commissions which require competitive bidding generally recognize certain exceptions to the requirement, such as cases involving small issues. In other situations which do not fall within specific exceptions, regulatory discretion is sometimes invoked. A number of decisions in recent years have authorized negotiated underwriting or private placement of securities upon a showing that competitive bidding would not afford a lower cost of capital or that it would be inappropriate because of special circumstances.

Views of State Commissions

"Since rate of return is related to cost of capital," said the Georgia commission, in a 1954 order (7 PUR3d 22), "it appears the public interest demands that the lowest cost of capital be obtained at all times. The only way to insure this result is to require competitive bidding for security issues." It noted the need, however, for certain exceptions. The commission prescribed a general rule applicable to all security issues, excepting those of less than \$2 million, debt securities with a maturity of ten years or less issued to an institutional investor without a negotiation fee, securities issued pro rata to existing holders or in exchange for outstanding securities, and issues which would not be appropriate for competitive bidding.

In *Re South Atlantic Gas Co.*, decided January 14, 1958, the commission waived competitive bidding for bonds, notwithstanding an objectionable five-

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year redemption limitation, where the terms of an agreement with an institutional investor were generally favorable to the company. The commission recognized that disapproval of the agreement might cut off further financial aid from this investor, which had proved to be a reliable source of funds at a reasonable cost.

The District of Columbia commission has revoked its general order relating to competitive bidding (14 PUR3d 504). The commission indicated that it has always considered each application to issue securities upon its own merits rather than under rigid requirements of a prescribed rule.

When the District commission's competitive bidding rule was adopted in 1935, the major public utilities operating in the District were subsidiaries of holding companies or had other affiliations. These intercorporate relationships, said the commission, gave rise to suspicion of improper influence in corporate financing. Noting that the causes of such suspicion have now been removed, the commission indicated that each authorization would henceforth be based upon the merits of the application, under such terms and conditions as may be found appropriate.

In waiving competitive bidding, the commission has considered such factors as the peculiar need of the issuer for the services of local investment dealers who have specialized in underwriting local utilities; the advantages of a private sale at a time favorable to the issuer, marketwise; the adverse effects, in a changing market, of delays incident to competitive bidding; and the reasonableness of compensation to dealers and other issuing expenses (12 PUR3d 428; 2 PUR3d 108).

In 1954 the California commission modified its rule exempting from competitive bidding issues of \$1 million or less, so as to exempt issues of \$3 million or less (7 PUR3d 176). This change was made because security underwriters had shown little interest in competitive bidding proceedings involving financing of less than \$3 million, and in view of the fact that sales in that amount made by private placement or negotiated underwriting had been consummated on reasonable terms. The commission noted that it has been willing in the past to waive competitive bidding requirements where the most advantageous terms might be expected from negotiated underwriting or private placement.

An electric company's proposal to sell unsubscribed shares of a stock issue under an agreement negotiated with underwriters was approved by the Massachusetts department where it was unlikely that competitive bidding would result in a lower cost of capital (2 PUR3d 359). Because of the uncertainties of present world conditions and their possible effect on the security market, said the department, no useful purpose would be served by overruling the judgment of management and requiring competitive bidding.

The Colorado commission has indicated that the public interest does not demand that competitive bidding be required in all instances. While the commission recognizes the desirability of competitive bidding, it considers each case on its particular facts. In exempting a relatively small amount of securities of a gas company, the commission noted that the price offered and the yields contemplated were favorable, that the market conditions were not stable, and that

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the delay incident to competitive bidding might result in considerably lower prices than could be obtained by private placement (92 PUR NS 282).

The Connecticut commission approved a negotiated agreement with underwriters for the sale of bonds and preferred stock, despite the complaint of an outside investment firm which wished to bid on the bonds (82 PUR NS 594). Of prime concern to the commission was the cost of the capital to be raised, as measured by the current cost of capital for comparable securities. The cost under the negotiated agreement was at least as good as could be obtained under competitive bidding. To delay the issuance of these securities by resort to competitive bidding, considering the uncertainties of changing conditions in the money market, said the commission, would be against the public interest.

The New York commission has approved private placements where it was doubtful, as shown by the evidence, whether better terms could be secured under competitive bidding (16 PUR3d 73; 98 PUR NS 251). But the commission has determined that competitive bidding generally results in the most favorable cost of money to the issuing company and that any deviation from the general competitive bidding requirement must have the soundest reason to support it.

Securities and Exchange Commission Decisions

The Securities and Exchange Commission considers requests for exemption from its competitive bidding requirements under Rule U-50 on the basis of the particular facts and circumstances of each case. However, even though an exemption is granted, the issuing corporation is not relieved from the necessity of maintaining competitive conditions, so far as feasible, in negotiating a sale of securities.

In a 1955 decision the commission exempted a gas pipeline bond issue of approximately \$97 million in view of the size of the issue and the fact that the bonds were to be issued in instalments during the construction of a pipeline (11 PUR3d 62). The money market was in an unsettled state at the time. Although the issuing company discussed the issue with only two institutional investors who purchased it, the commission indicated that the circumstances showed no "lack of economies in the raising of capital." It appeared that construction would be delayed, against the public interest, if renegotiation were required.

The commission also exempted a preferred stock issue of an electric company (3 PUR3d 231). Disappointing results of issues offered under competitive bidding had been experienced in the recent past, and a large amount of new securities were expected on the market. At the same time, the stock market was unsettled. The commission noted that competitive conditions had been maintained in the selection of the agent to negotiate the placement of the stock, and the price, dividend rate, and fee to the agent were considered reasonable.

In other decisions allowing sales without competitive bidding, the commission has recognized such supporting reasons as the magnitude of the issue, the substantial number of institutional investors involved in the purchase, and the presence of arm's-length negotiations (85 PUR NS 120; 71 PUR NS 418).

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Federal Power Commission Attitude

Competitive bidding should be required, said the Federal Power Commission in a 1948 ruling on security issues to finance a pipeline, where there is a lack of arm's-length relationship between the issuing company and financial houses that have offered to manage the financing (76 PUR NS 422). A natural gas company proposed to sell securities through two investment houses which had a substantial financial interest in the company. The seller presented no financing commitments for the sale. It had not canvassed the money market but merely suggested what it thought the securities could be sold for. It opposed competitive bidding, asserting that a negotiated sale would result in the most economical cost of money. The commission thought there was a lack of arm's-length relationship and held that the public interest would not be served if the financing were permitted to be headed by the dominant financial interests in the company.

In *Re Holyoke Water Power Co.*, decided December 27, 1957, the commission authorized private placement of a \$34 million issue of bonds (for new money) with institutional investors. The funds were to be provided as required over a period of three years, with a commitment fee of three-fourths of one per cent per annum on the unused balance and a 10- to 12-year redemption restriction against refunding with lower-cost debt money. For services in arranging the sale, the company proposed to pay a fee of \$75,000. The commission held that sufficient cause had been shown for exempting the issue from competitive bidding requirements.

Review of Current Cases

Electric Rate Increase Granted with Ruling on Uniform Rates and Recognition of Full Tax Liability

HOUSATONIC PUBLIC SERVICE COMPANY obtained \$530,000 of a \$664,000 gross operating revenue increase requested of the Connecticut commission. The increase will raise the electric rates of the company and, by its request, reduce its gas rates by \$50,000. Plant additions and rising costs were cited as necessitating higher rates. Authorized revenues will now provide an overall rate of return of about 6.1 per cent.

Uniform Rate Revision Rejected

Housatonic is operated as a combina-

tion of several operating companies which were merged with it. The rates charged by the former companies were retained after the merger, so that Housatonic's present rate structure is not uniform within the various towns and areas that it serves.

The commission refused to authorize a uniform rate structure proposed by the company, noting that it would result in inequities in many instances. Furthermore, under the proposed structure many customers would be compelled to pay higher rates than the rates of which notice of

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hearing had been given. The commission thought uniform rates should not be authorized at this time. However, it directed the company to analyze its two divisions with a view to establishing uniform rates at a later time.

Demand Charges

In support of a request to reduce its demand measuring period from thirty to fifteen minutes, the company referred only to a study made several years previously, covering a relatively short period, with no estimate of the effect that the proposed change would have on the rates involved. The evidence was inadequate to warrant the change.

The commission refused to allow the company to apply a uniform 100 per cent ratchet in its demand power rates. Most of its electric demand charges were based on a percentage of demand values established during the preceding year. These values were 70, 80, or 100 per cent of the highest demand. Under a 100 per cent ratchet the billing of customers in many instances would be based on demands established in a prior billing period. It would not be reasonable, said the commission, to adopt rigid demand ratchets without regard to the size or multiplicity of the consumers. While the commission did not oppose the theory of reasonable ratcheting, it indicated that the extension of the 100 per cent ratchet at this time would be unsound economically and might have an adverse effect on operations.

Rate Base and Expense Items

Estimated capital expenditures for construction to be completed and placed in service during 1957 were included in the rate base. Later expenditures, though a part of the company's 1957 construction program, were excluded. The claim for

cash working capital was approved as reasonable since it represented direct operating and maintenance expenses for forty-five days. The materials and supplies allowance represented the average monthly balance during 1956.

The expense of maintaining an office in the financial district of New York for the chairman of the board was excluded from operating expenses for rate-making purposes. No showing was made that this expenditure was necessary to the public function of the company or that it afforded any benefit to the consumers of gas and electricity. Also excluded was a final charge, during the test year, to write off retired plant. This charge would not affect the future period for which the rates were determined.

Tax Effect of Depreciation

The company has determined that it will no longer continue to claim for federal income tax purposes the maximum amount of depreciation expense permitted under § 167 of the Internal Revenue Code of 1954. Beginning in 1957, it will compute the deduction on the basis of the straight-line method. In 1956 alone, the company's income tax liability was \$47,000 less than it would have been under straight-line depreciation.

The president of the company stipulated on the record that if the commission would allow the tax liability on the basis of straight-line depreciation for rate-making purposes, and if the company should later change back to accelerated depreciation, the resulting tax saving would be refunded to the consumers pro rata until such time as the rates could be reviewed. The commission adopted this stipulation in its order and allowed the tax liability based on straight-line depreciation. *Re Housatonic Pub. Service Co. Docket No. 9515, January 22, 1958.*

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Extra Return Allowance in View of Contemplated Plant Improvements Denied

ALLOWING a rate of return of 6.04 per cent, the Connecticut commission granted a water company about one-third of a requested increase in revenues. Based on the figures submitted by the company, the rate increases which it sought would result in a rate of return of 7.7 per cent. The company recognized that 7.7 per cent was high, but it sought to defend this rate on the ground that a plant improvement program already initiated would increase the rate base and thereby reduce the rate of return since the improvements would be essentially nonrevenue producing.

The commission indicated that it could not, under Connecticut law, allow a return on property which the owner expects to dedicate to public service at some future time.

A reasonable return can be allowed only on property presently in use. This return, the commission said, should afford sufficient revenues to pay operating expenses, service outstanding debt and equity, and provide a reasonable transfer to surplus, so as to permit the company to maintain its financial stability and provide efficient service.

Inch-foot Charge Approved

In lieu of a present flat annual charge for public fire protection, the company proposed to establish an inch-foot and hydrant charge. The level of this new rate would result in an increase of 100 per cent in the charge for fire protection.

The commission did not indicate what part of the allowable aggregate revenue increase would be allocated to public fire protection service in the rates to be submitted later for approval. It noted that such service should contribute its fair share of total revenues.

The commission observed that the inch-foot method of charging for public fire protection is well-established among water companies and has been accepted as fair and equitable. As the company replaces small lines with larger ones, as contemplated, the cost to the public for fire service will increase under the inch-foot charge. However, property owners will benefit at the same time through reduced fire insurance rates, and the public will also benefit through improved protection. *Re Thomaston Water Co. Docket No. 9565, January 31, 1958.*



Note Issue for Nonutility Financing Disapproved

PROTECTION of investor interests is not the only consideration entering into a finding that a proposed security issue is in the public interest, said the New York commission. An equal, if not greater, consideration is the protection of the customers of the utility. The commission denied an application by New York Water Service Corporation for approval of an \$8 million issue of promissory notes.

Through condemnation awards for the major portion of its properties, the com-

pany had realized a profit of about \$15 million. Two problems confronted the company: First, it would have to pay a substantial federal tax unless the proceeds of the awards were invested in similar property. Second, some stockholders insisted that the company distribute the large amount of cash which it had on hand.

The company wanted to avoid the tax and continue to hold the proceeds. It did not intend to pay out the profit in the form of dividends. However, it could not satisfy

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all of its stockholders without a distribution which would result in taxes. The commission observed that the policy of the company would turn it into a combination of public utility and investment trust, with the latter the predominant feature.

Notes to Avoid Tax

The company proposed that it be permitted to issue promissory notes which would be used to retire a portion of its stock. This would rid the company of the objecting stockholders while permitting the retention of the cash for reinvestment, with the result that the tax be avoided.

The company contended that the sole question before the commission was whether the transaction was in the public interest. The statute, however, requires a finding that a security issue is necessary

before it may be authorized. In effect, the company would borrow money while holding cash and liquid assets, not necessary to utility operations, of nearly double the amount it intended to borrow.

The commission pointed out that the proposed issue of notes would not benefit the customers of the company but, rather, would be detrimental to them. It would create a debt, not necessary to the utility business, which the customers might be obligated to pay, and it would result in pledging the credit of a utility for the benefit of nonutility activities. The commission intimated that the company could accomplish its purpose by segregating utility and nonutility functions and protecting customers from the burden of a nonutility debt. *Re New York Water Service Corp. Case 18302, January 28, 1958.*



Call Restriction Approved for Bonds Sold to Institutional Investor

RELUCTANTLY, the Georgia commission approved a 5-year limitation against the redemption of $5\frac{3}{4}$ and $5\frac{1}{4}$ per cent bonds with lower-cost debt money. The company proposed to sell the bonds to an institutional investor.

Declaring categorically that it does not approve of restrictive call provisions in bond indentures, the commission remarked: "During the recent so-called 'tight' money market we have approved restrictive provisions only with great reluctance and upon the insistence of financial experts that to do otherwise would make the cost of money prohibitive for the utility. The current changing policy of the Federal Reserve banks and the avowed intent of the federal government to increase the supply of money available bears out our earlier misgivings about approving restrictive call provisions."

All that can be said in favor of the call restriction, the commission noted, is that the investor has consistently made funds available to the company on reasonable terms. It appeared that disapproval of this provision of the agreement might result in a termination of further financial aid from this investor.

The company attempted to show that the bonds were in fact two distinct issues, neither of which, alone, amounted to \$2 million, and that they were therefore exempt under the competitive bidding rule. The commission did not expressly rule upon this contention but, nevertheless, waived the competitive bidding requirement, considering that the terms of the agreement were reasonable aside from the objectionable call restriction. *Re South Atlantic Gas Co. File No. 19440, Docket No. 1289-U, January 14, 1958.*

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Consolidated Tax Return Savings Added to Operating Income

THE New Jersey commission concluded that the New Jersey Bell Telephone Company's claimed operating income of \$26,209,000 appeared reasonable except that it had not given consideration to the substantial savings realized through filing, with affiliated companies, of a consolidated tax return. The operating account was adjusted to reflect such savings.

The commission's rate base utilized net investment as the primary measure of value, although recognition was given to the continuing growth of the company's plant and also to the fact that any increase

in rates granted to the company was of necessity prospective. Evidence of value based on trended original cost, developed for the company by the use of index numbers, was considered by the commission to be similar to a cost-of-reproduction study, and subject to a number of defects pointed out in previous decisions.

Increased revenues authorized would produce a return in the range of 6 per cent to 6.37 per cent, which the commission considered fair. *Re New Jersey Bell Teleph. Co. Docket No. 10049, December 30, 1957.*



Order in Favor of Co-operative in Territorial Dispute Overturned for Lack of Supporting Evidence

THE Indiana supreme court upheld a lower court in setting aside a commission order which ruled in favor of a telephone co-operative in a territorial dispute with a privately owned company. The commission had made no findings based on substantial evidence to support its determination.

The co-operative held a "certificate of territorial authority" in the disputed area, granted on the basis of a map of its claimed service area filed pursuant to a general requirement of the commission. It showed no real interest in the area, however, until some industrial plants moved in, with the prospect of profitable telephone business.

Indiana Telephone Corporation operated a telephone system in adjacent territory served by its Shoals exchange. The company did not file a map outlining its territory until a short time before the appearance of the new industrial plants, when it obtained the signature of the president of the co-operative to a company map

covering the disputed territory. On the basis of this map, the company petitioned the commission for a certificate of territorial authority. About the same time it constructed lines into the area and commenced service. The co-operative was not then able to construct facilities and provide service. The co-operative opposed the company's certificate request and later asked the commission to order the company to remove its facilities.

The commission ruled in favor of the co-operative, ordering the company to remove its lines after the co-operative had constructed its own lines to the industrial plants. Upon review, the trial court set aside the order. Actually the commission had made findings in favor of the company on the issues of public necessity and community of interest (in the city of Shoals) with ability to serve. These findings did not support the commission's order in favor of the co-operative, the high court ruled. The trial court was therefore right in setting aside the order.

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Invasion of Commission Domain

But the trial court went further. It found that the public convenience required service by the Indiana company in the disputed area and ordered the commission to determine its boundary. The trial court purported to retain continuing supervision and jurisdiction over the further proceedings of the commission.

The state supreme court held that the trial court invaded the sole province of the commission when it attempted to find that the public convenience required the Indiana company to serve in the disputed area.

A court may not substitute its opinion on a subject matter properly within the judgment or discretion of the commission and then enter an affirmative order requiring the commission to carry it out, said the high court. These affirmative

orders of the trial court were therefore deleted from its decree, leaving the proceeding pending before the commission for further action.

Public Convenience Is Paramount

The high court commented that a controversy over a violation of a certificate of territorial authority could not be regarded as a mere dispute between private parties. The public convenience and necessity are paramount. Noting that the commission had made no finding that the Indiana company had acted in bad faith, the court observed that the public convenience should not have to be sacrificed in order to inflict punishment in a case where there is no fraudulent or intentional flouting of the commission's orders. *Indiana Pub. Service Commission et al. v. Indiana Teleph. Corp.* 146 NE2d 248.



Size and Debt Ratio Figure in Return Allowance

THE Colorado commission, in authorizing a water rate increase that would produce a return of 6.5 per cent, which the commission considered reasonable, commented that certain things set the company apart from others in the utility field. First, the company was a small one, its service territory and supply of water restricting growth possibilities. Investment in future plant, consequently, would not stem from the service of additional customers but from improvement and replacement of existing facilities at higher costs without producing increased revenues.

The company did not have the flexibility of income, nor the ability to recover from other sources losses it sustained in its service area, which characterized large integrated companies. It was not as attractive an investment opportunity as larger companies. Therefore, to obtain funds needed for system improvements, an in-

come sufficient to assure repayment had to be provided.

High Debt Ratio

Another unusual feature was a debt ratio of 90 per cent. The consequences were, on the one hand, that expense was reduced, interest payments being tax deductible; but, on the other hand, the high debt ratio was a less attractive investment than one with a high proportion of equity, and higher yields had to be paid to attract capital. With the fixed obligation so great in relation to assets, a small drop in revenues raised the specter of bankruptcy for the company. All of these circumstances marshaled in favor of allowing a higher rate of return.

Operations in recent years had resulted in the accumulation of a loss carried forward so that no federal income tax would actually have to be paid for approximately

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one year. Retention of this money within the company reduced the number of dollars required to be obtained through the rate of return.

Retirement of Debt

There was, however, the matter of debt amortization. Though the company's present obligations did not require establishment of a sinking fund, it had to be recognized that outstanding debt must be paid and preparations made for payment, the commission pointed out. Depreciation rates were low enough so that they would not generate cash fully to meet these obligations within the allotted time; after payment of interest, any normal rate of return would leave only a relatively small number of dollars available for surplus.

Continuity of service and investment assumed that some progress would be made on net worth—that the company would not be borrowing merely to stay even. While the commission did not believe that any specific amount should be provided "below the line" for debt amortization in this case, provision had to be made for sufficient funds in total to meet all of the money demands the company faced.

Test-year Figures

An adjustment was made in the figures submitted by the company for test-year operating revenues. The commission noted that the company's figures had included in the test period a season of unusually high precipitation and substituted, instead,

figures for a previous year which more nearly reflected the "average year's" use of water, which depended upon the availability of water and the amount of precipitation during the irrigation season.

Other Adjustments

Another adjustment included provision for five-year amortization of regulatory expense incurred in the instant proceeding. Also, certain management and supervision expenses were adjusted to reflect the dual capacity of some employees, whose time was allocated between the water company and its parent. In allocating such an expense, the commission pointed out, a study of the time involved was a reasonable method of making the proration.

The company had included in depreciation figures an amount representing a five-year write-off of pumping equipment at certain wells. Having failed to sustain the burden of proof for the necessity of the apparent fast write-off, the commission adjusted the depreciation expense so as to depreciate the pumping equipment over a period of twenty years.

Customer advances and contributions in aid of construction were excluded from the rate base. Cash working capital allowance was included in an amount higher than would normally be allowed since the company was billing its customers on a quarterly basis instead of on a monthly basis. *Re South Suburban Water Co. I & S Docket No. 401, Decision No. 49312, January 6, 1958.*



Failure to Evaluate Benefit of Proposed Service Violates National Transportation Policy

THE United States Supreme Court held that the Interstate Commerce Commission's failure to evaluate the benefit that a proposed motor carrier service

might bring to the public, and to take into consideration the claimed benefit of reduced rates, violated the National Transportation Policy, as formulated by Con-

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gress. A motor carrier had applied for a certificate to provide service between points served exclusively by rail. The commission denied the application on the ground that the rail service was reasonably adequate. The motor carrier then sought to have the commission order set aside, but the court dismissed the complaint. On direct appeal, the Supreme Court reversed the lower court and remanded the cause to that court with directions to set aside the commission's order and remand for further proceedings.

National Transportation Policy

The National Transportation Policy, pointed out the court, is the yardstick by which the correctness of actions of the Interstate Commerce Commission should be measured. The commission possesses a wide range of discretionary authority in determining whether the public interest warrants certification of any particular proposed service. That discretion, however, must be exercised in conformity with the declared policies of Congress.

The court would not evaluate the evidence according to its own notions of the public interest. Neither would it summarily approve the commission's evaluation of the record without determining that such evaluation had been made in accordance with congressional mandate.

Preserve Inherent Advantages

The National Transportation Policy requires the commission to administer the Interstate Commerce Act so as to recognize and preserve the inherent advantages of each mode of transportation. The com-

mission must assess, in determining a motor carrier's application for a certificate to provide service between points served exclusively by rail, the inherent advantages of the proposed service, how significant these advantages are in a given factual context, and what need exists for a service that can supply these advantages. While adequacy of rail service is a relevant consideration, it is not sufficient reason for denial of the certificate.

Comparative Adequacy

Relevant or comparative adequacy of existing transportation service is the significant consideration when the interests of competition are being reconciled with the policy of maintaining a sound transportation system. To reject the carrier's application on the bare conclusion that existing rail service can move available traffic, without regard to the inherent advantages of the proposed service, would give one mode of transportation unwarranted protection from competition by others.

The National Transportation Policy was held violated by the commission's failure to take into consideration the testimony of shipper witnesses, on the ground that their main purpose in supporting the application was a prospect of obtaining lower rates. The ability of one mode of transportation to operate with a rate lower than competing types of transportation was held to be the type of inherent advantage congressional policy required the commission to recognize. *Schaffer Transp. Co. v. United States*, 2 L ed 117.



Gas Rate Contract Rejected as Initial Filing

THE Federal Power Commission would not permit Humble Oil & Refining

Company to file a natural gas rate contract as an initial rate for sales to Southern

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Natural Gas Company from the Gwinville field in Mississippi. Humble already held a certificate covering the same acreage, and an effective rate schedule was in force covering continued service from such acreage. The new contract could not therefore be filed as an initial rate even though the contract previously filed as the effective rate schedule contained a termination date of December 1, 1957.

The new contract provided for a rate of 20 cents per Mcf as opposed to a rate of 7.2 cents per Mcf under the original rate schedule. The commission observed that the new contract was rejected without prejudice to a retender of it as a change in rate.

Commissioner Digby, in a dissenting opinion, indicated that a hearing should have been granted on the certificate application and the new rate filing to determine whether the action was in fact an initial rate or an increase in an existing rate. The fact that the land description or

geographical area in the new filing may be the same as that in the old contract is not controlling, said the commissioner.

Humble contended that the commission had limited the term of the existing certificate to be coextensive with the term of the contract originally filed. The company pointed out that the certificate was issued, in the language of the order, "as more fully described in the respective applications." Humble's application, though mentioning no limitation of term, described the original contract which contained a terminating date.

The commission rejected Humble's argument. There is no question of the commission's authority to attach such a limitation, said the commission, but it does so only when a specific request is made and only upon a showing that the public convenience and necessity require the limitation. *Re Humble Oil & Refining Co. et al. Docket No. G-13566, January 10, 1958.*



Bus Substitution for Passenger Trains

THE Maine commission authorized the Bangor & Aroostook Railroad to discontinue operation of two main-line passenger trains and substitute bus service between two cities. It is well-established, pointed out the commission, that if public convenience and necessity require the operation of services sought to be discontinued, they must be continued in spite of sustained losses, unless reasonably adequate service by other means can be substituted. The evidence here showed that the proposed bus service would adequately meet the public need.

The railroad had sustained out-of-pocket losses of approximately \$72,000 for 1956 from the operation of the two trains. Allowing depreciation and inter-

est on investment, the railroad would have saved approximately \$124,000 if the trains had not been operated. In 1957, a similar out-of-pocket loss was incurred.

Attempts to Maintain Service

The commission found that the railroad had done all that was reasonable and economically feasible to encourage passenger traffic, without success. It had purchased diesel locomotives, modern passenger coaches, and Pullman cars. All trains had dining cars serving reasonably priced meals. Passenger service had been advertised extensively.

Public relations "gimmicks," such as free breakfasts for Pullman passengers, had been tried and a full-time passenger

PROGRESS OF REGULATION

sales representative had been employed. Railroad witnesses maintained that the railroad had adopted a liberal fare structure and, in an effort to increase passenger business, had established reduced excursion fares. In spite of all such efforts, passenger traffic continued to show a decline and costs were rising. The private automobile had displaced the railroad as a prime transporter.

The commission agreed that the sub-

stitution of buses for trains would convert the railroad's highway operation from a small deficit to a rather substantial profit (approximately \$44,000 in 1958). First-class and preferential mail presently handled by the trains discontinued would receive reasonably adequate handling by bus, although parcel post would be slowed somewhat. *Maine Pub. Utilities Commission v. Bangor & A. R. Co. FC No. 1531, October 25, 1957.*



Certificate Extension Affirmed Despite Instances of Duplication

THE Oklahoma supreme court affirmed a commission order granting the application of a motor carrier for a certificate authorizing it to operate in a larger territory. The court held that the commission order was sufficiently supported by evidence of public necessity and convenience although the extension might in some instances give additional service or duplicate service of other carriers be-

tween certain intermediate points for which no present need was shown.

The court noted that, on appeal from a commission order granting a certificate, it was required to review the evidence and had to sustain the order appealed from, if it was supported by substantial evidence. *Mistletoe Express Service v. Oklahoma Corp. Commission et al. 316 P2d 865.*



Financial Ability Figures in Transfer of Carrier Authority

OTHER factors remaining equal, it is not against the public interest to permit a carrier in a weakened financial condition to retire from the field and be succeeded by a well-financed and qualified operator, said the Utah commission. Thus, the commission in effect authorized the transfer of hauling authority from one such operator to the other. Under the commission's rules, however, the transfer must be accomplished by cancellation of the existing certificate and issuance of a new one.

The new carrier had been operating a hauling business under an ostensible

lease whereby he hired his own employees and operated and maintained his own trucks for the account of another certificated carrier. The commission thought this arrangement was more in the nature of a brokerage or transportation-for-hire arrangement, the legality of which was at least questionable.

A protesting carrier contended that the proposed transfer would endanger its financial position as well as that of other competing carriers in the area. It appeared that the transferee was otherwise well-qualified to perform the proposed service. The existing certificate was in

PUBLIC UTILITIES FORTNIGHTLY

good standing upon the records of the commission.

The commission noted its long-standing practice of permitting such transfers without a full showing of convenience and necessity on the part of the new carrier if the authority of the retiring car-

rier, as here, is active and in good standing. The primary concern in cases of this type, the commission indicated, is the public interest as distinguished from the narrow interest of competing carriers. *Re Fincher, Case No. 4520, December 3, 1957.*



Refund to Gas Company Results in Larger Refund to Consumers

IN an interlocutory order an Iowa district court set forth the principles governing an adjustment of a refund previously ordered to be paid by Iowa-Illinois Gas & Electric Company to firm gas customers in Fort Dodge.

The refund was required as a result of excessive charges collected by the utility during the period of an injunction against confiscatory ordinance rates. The company had failed to allocate a sufficient part of the cost of service to interruptible customers and had overcharged firm users. A retroactive rate reduction by the company's supplier, Northern Natural Gas Company, relating solely to the demand charge, made it necessary to correct the amount of the refund to firm consumers. Under the cost formula used by the court, in determining the original refund, Northern's refund to Iowa-Illinois reduced the cost of serving firm customers. An increase in the amount of the retail company's refund was therefore necessary.

Iowa-Illinois contested this use of the formula. It contended that the court should simply trace the excess collected by the supplier into the retail company and out to the consumers in the same amount. The court pointed out that the cost of gas—to which the supplier's refund was only an adjustment—did not simply go in one side of the utility and out the other. The only

correct method, said the court, is to ascertain the supplier's final, total charge and apply to it the formula which was settled upon when the case was originally decided.

Iowa-Illinois asserted that this method would result in a larger refund to its customers than the utility itself received from its supplier. However, the formula required 100 per cent of the rate charged by the supplier to be paid by the firm and interruptible users, so that the portion not borne by one class would fall on the other. The refund from the supplier had the effect of reducing the demand charge.

The company argued that, as Northern increased its charges during the refund period, the company had entered into private agreements with its interruptible customers increasing their rates and undertaking to refund specified amounts in the event Northern's rates were not upheld. In view of these agreements, Northern's refund would not be sufficient to satisfy the refund liability under the agreements and also meet the refunds to firm customers as required under the court's formula.

The court noted that the utility came under a very heavy responsibility when, under the temporary injunction against the ordinance rates, it was freed to fix and apply its own rates. The court could not later be estopped to make the firm customers whole merely because the com-

PROGRESS OF REGULATION

pany had entered into these private agreements to pay larger refunds to interruptible customers than might have been warranted. The court ordered further proceedings to permit the parties to file reports

showing the amount of the excess collected from the metropolitan firm customers for the period of the injunction. *Iowa-Illinois Gas & E. Co. v. City of Fort Dodge, Civil No. 34033, December 26, 1957.*



Competition under Void Certificate May Be Enjoined

THE supreme court of Nebraska reversed and remanded a trial court's judgment dismissing an action by motor carriers holding valid certificates for an injunction against competing operations by a carrier holding a certificate alleged to be void. In doing so the court held that a certificate issued without the filing of an application, giving of notice to interested parties, and a hearing thereon was void.

The court pointed out that the power

of the commission to issue a certificate is predicated upon compliance with such procedural requirements. Operation by a common carrier under a void certificate in the area of companies holding valid certificates constitutes an invasion of the property rights of the valid certificate holders. Consequently, an action for injunctive relief by such parties may properly be maintained. *R. B. "Dick" Wilson, Inc. v. Hargleroad et al. 86 NW2d 177.*

Other Recent Rulings

Emergency Fare Increases. A railroad redevelopment corporation was granted authority to increase passenger fares, the New York commission holding that failure of the company's management to notify the commission and the board of directors that rebuilt trucks had been used instead of new trucks, in carrying out the overall objective of the car rehabilitation program, did not constitute a bar to authorization of the new schedules. *Re Long Island R. Co. Case 18179, November 12, 1957.*

Rail Freight Rates Up. Railroads, citing interstate rail freight rate increases, obtained authority from the Wisconsin commission to increase intrastate freight rates to provide for rising operating costs. *Re Railroad Freight Rates and Charges, 2-R-3227, December 31, 1957.*

Passenger Train Discontinuance. The New York commission authorized a railroad to discontinue operation of two passenger trains between certain points where, although the company's presentation of the case was subject to criticism, evidence indicating, among other things, that patronage had been less than the number of the train crew, was sufficient to justify discontinuance. *Re New York C. R. Co. Case 18520, December 2, 1957.*

Train Discontinuance. The New York Central Railroad was denied authority to discontinue certain trains between Syracuse and Rochester on its Auburn branch where public convenience and necessity outweighed the financial loss resulting from continued operation, the commission commenting that the railroad had deliberately attempted to lose business by

PUBLIC UTILITIES FORTNIGHTLY

failing to list the trains in a timetable, and that a railroad which saw fit not to hold its services open to the public could not be heard to complain that the public did not patronize it. *Re New York C. R. Co. Case 18519, December 2, 1957.*

New Water Facilities. The Wisconsin commission authorized the city of Fond du Lac to construct water facilities to provide additional supplies where the new facilities would not add to the cost of service without proportionately increasing the value or availability of service. *Re City of Fond du Lac, CA-3563, December 31, 1957.*

Working Capital Allowance. The Connecticut commission disallowed a small water company's claim for a working capital allowance where ample funds were received from advance billings to enable the company to carry on normal operations, the commission commenting that to allow the company's claim would require patrons to provide working capital through advance payments and thereafter to pay a return on their own money in the form of higher rates. *Re Sharon Water Co. Docket No. 9544, December 13, 1957.*

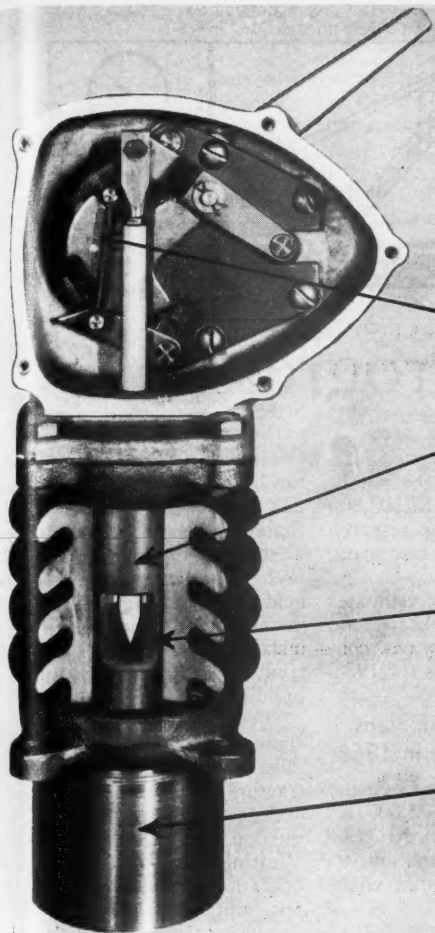
Telephone Mileage Steps. The California commission, in an interim order, authorized four telephone companies to increase mileage steps for multimessage unit service to coincide with short-haul toll mileage steps, although denying a request to increase multimessage unit rates, where the commission found that uniformity of mileage steps and multimessage unit rates in the area were in the best public interest, and the increased revenues would make that element of telephone operations self-sustaining and, in so far as possible, carry its full and equitable share of the burden

of providing revenues. *Re Pacific Teleph. & Teleg. Co. et al. Decision No. 55936, Application No. 39309, Case Nos. 5974, 5983, December 10, 1957.*

Rate Differential. The Wisconsin commission considered a 25 per cent differential between rates charged residents of a city for water service and rates charged customers located outside of the city reasonable because of the relatively greater distances involved and resultant greater cost per customer, while the same differential in rates for public fire protection service was considered unreasonable because such charges are largely related to investment; when rates are determined for each hydrant and foot of main, the location and relative density of general service customers has no material effect. *Re Wisconsin Power & Light Co. 2-U-4841, November 29, 1957.*

Preferred Stock Issue. In a supplemental order, the Federal Power Commission approved a sale of preferred stock by an electric company under an underwriting agreement at a price of \$100 per share, with a dividend rate of \$4.80 per share and an underwriting commission of \$1.90 per share. *Re Iowa Power & Light Co. Docket No. E-6793, January 13, 1958.*

Dual Authority. The grant of a motor transportation broker's license and a radial highway common carrier permit to the same operator goes contrary to public interest, according to the California commission, since there would be confusion as to which authority the licensee is operating under. *Re Kohrt (P & B Motor Transportation), Decision No. 54902, Application No. 38255, April 22, 1957.*

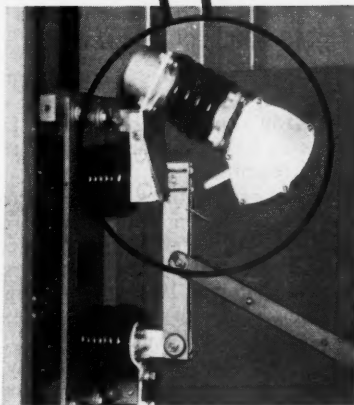
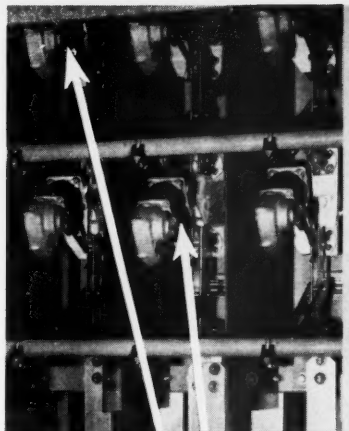


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Break rated loads instantly and safely with **DELTA-STAR POWERUPTER SWITCHES**

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is an unusually safe, positive interrupting switch, ideal for use in small enclosed spaces where safety is vital. With the Delta-Star POWERUPTER SWITCH there is no external arc, no danger of phase-to-phase or phase-to-ground faults. Therefore, personnel and equipment are safe even if the unit is inadvertently operated.

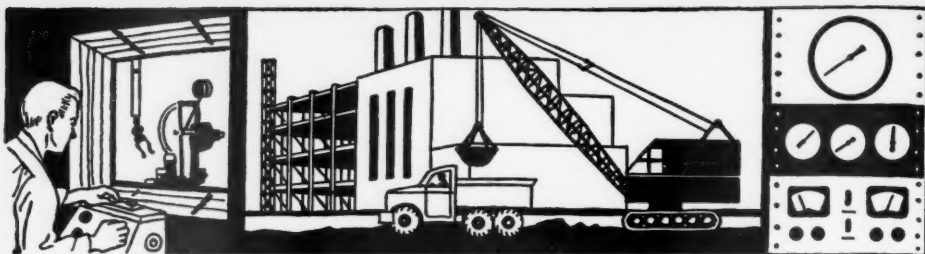
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able in combination with fuses. Ratings from 7.5kv through 34.5kv, with 600-amp. interrupting capacity; continuous current ratings of 400, 600, 1200, and 2000 amperes. For complete information, call your nearest Delta-Star representative or write *Delta-Star Electric Division, H. K. Porter Company, Inc., 2437 Fulton St., Chicago 12, Illinois. District offices in principal cities.*

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Industrial Progress

Northern States Power Plans \$54,000,000 Expansion

NORTHERN States Power Company plans to invest more than \$54,000,000 in construction and new facilities in 1958, company officials reported recently.

NSP's expenditures for 1958 are part of a continuing construction program that will see an estimated \$175,000,000 invested in the next three years. In the past 10 years, including 1957, the company's construction expenditures totaled \$381,100,000.

"We anticipate that our company's growth pattern of the past will continue in the future and that the next 10 years will see our business doubled, just as it has in previous decades," said Allen S. King, president of NSP. "We have always had more than enough power for all users in the past, and our continuous construction program is geared to keep the power supply well ahead of the growing use of electricity on farms, in factories, and in homes throughout our service area."

Breaking down NSP's budget by divisions reveals that St. Paul has the largest allocation with nearly \$20,000,000. More than half of this is for construction of a new 156,000-kilowatt generating unit at High Bridge plant. Work was started on this unit last year. New construction planned to be initiated in 1958 calls for expenditures of \$8,900,000, with an additional \$10,548,000 going toward building the new High Bridge unit, bringing the total for the St. Paul division to \$19,448,000.

Expenditures planned for Minneapolis division under the 1958 budget total \$10,000,000.

Other 1958 budget allocations by divisions include \$2,543,700 for Stillwater, \$1,955,900 for Minnetonka, \$1,423,300 for Faribault, \$1,547,200 for St. Cloud, \$1,383,600 for Grand

Forks, \$1,701,600 for Fargo, \$842,400 for Minot, \$1,301,200 for Southwestern (Montevideo), \$2,502,800 for Sioux Falls, including research and development on the atomic plant, and \$349,800 for Mankato.

In addition, preliminary estimates for NSP of Wisconsin indicate total allocations of \$9,000,000 for new construction and improvements for 1958.

Florida Power & Light Plans \$75,000,000 Expansion in 1958

FLORIDA Power & Light Company plans to spend a record \$75,000,000 on expansion in 1958. Its construction budget last year was \$66 million, according to McGregor Smith, chairman.

The company said engineering estimates indicate it will spend \$316,000,000, including the 1958 budget, on expansion in the next four years. In the last six years, Florida Power & Light has been spending at an average rate of \$42,000,000 a year for new construction. In the next four years, the rate will be stepped up to an average of \$79,000,000 yearly. Expenditures for the 10-year period began in 1952 will total about \$567,000,000, up from an original estimate of \$332,000,000, the company said.

When the expansion program began in 1952, the utility had a capacity of 502,000 kilowatts. Capacity currently is 1,160,000 kilowatts and by the middle of 1961 the company expects to have a capability of 2,120,000 kilowatts.

Westinghouse Opens 1958 "Power-Up" Road Show

WESTINGHOUSE Electric Corporation has "hit the road" with a professionally acted and directed theatrical show designed to remind America's expanding industry that so far it is electrically underpowered.

The 1958 "Power-Up" road show has been booked to play in more than 125 cities throughout the United States between now and mid-summer. Target for the company's most comprehensive sales promotion in the field will be those who have a "sit" in what kind of equipment is to be installed in new or remodeled industrial, commercial or institutional buildings.

Westinghouse officials estimate that some 20,000 representatives of industrial companies, electrical contractors, consulting engineers, architects will see the 90-minute production. To carry out the program, Westinghouse has asked for the operation of approximately 175 electric utilities—practically all the producers in America's industrial markets.

For some time, company spokesmen have been pointing out that a key to industrial profits in the face of rising costs is "electromotion"—a word they coined to show that automation processes are based on the use of electrical energy. Their thought has been that the rate of industrial electric power consumption will increase 300 per cent by 1970, but that industry in general is not even wired adequately for the job it has to do to

Anchor Metals Names McMullan Mgr. of Sales, Fort Madison Division

SAMUEL A. McMULLAN of Pittsburgh, Pennsylvania, has been named manager of sales and engineering for the Fort Madison, Iowa, division of Anchor Metals, Incorporated, of Hurst, Texas. The company is engaged in the manufacture of electrical transmission towers and switchgear structures.

Mr. McMullan joined Anchor Metals on January 20th. He was a contracting engineer with the American Bridge division, U. S. Steel Corp., Chicago. P.

He had previously been with the Iron Works Company in Pittsburgh for six years and with the Knox Steel Company of Pittsburgh, also for six years.

He has had more than 25 years' experience in structural steel design, and 15 devoted exclusively to the transmission tower industry, including design, estimating, and engineering problems.

Anchor Metals, Incorporated, with executive offices in Hurst, Texas, joined the Fort Madison division in December of 1957 to serve the north central area of the United States.

Hyde F. Mooney is Anchor Metals president and R. J. Van Somer is sales manager and chief engineer. W. J. Anderson is executive manager at Fort Madison and Darrell McLemore is production manager.

Pittsburgh Consolidation Coal Opens Testing Laboratory

PITTSBURGH Consolidation Coal Company recently announced the opening of a Coal and Coke Testing Laboratory, located in Library, Pennsylvania.

Purpose of the laboratory is to provide facilities for a constant check on the qualities of Pitt Consol coals from its various mines, and to make these facilities available to the metallurgical industry for use in testing in which they are interested.

The testing program carried on in the laboratory will make possible periodic checks of coking coal blends, as well as to the qualities of individual lots. Results of these studies can be utilized to demonstrate to customers the coking possibilities available to them.

Announcements will shortly be forthcoming to advise the date of an official inspection of these facilities. The firm of the company is a long-established manufacturer of trench digging, backfilling and compacting machinery.

R. E. Orton Named Assistant General Manager of the Cleveland Trencher

THE appointment of Raymond E. Orton as assistant general manager of the Cleveland Trencher Company has been announced by Vincent S. Orton, president and general manager. Prior to his appointment at Cleveland Trencher, Mr. Orton was manager of engineering in the Automatic Transportation Division of Yale and Towne Manufacturing Company, Chicago. Previously he was for nine

years treasurer and general manager of the Orton Crane and Shovel Company and, for ten years before that, chief engineer of the Acme Steel Company, both Chicago firms.

Mr. Orton is the author of many technological papers, published in national technical journals, on the subject of industrial materials applications.

F. M. Nolan Named Sales Manager, A-C Switchgear Dept.

APPOINTMENT of Frank M. Nolan as manager of sales, switchgear department, has been announced by Allis-Chalmers.

Mr. Nolan joined Allis-Chalmers in 1943. Upon completion of the firm's training course for graduate engineers he served successively as an assistant engineer in engineering development, a product specialist in industrial sales, and an application engineer in the switchgear department.

Dravo Corp. Supplying Piping For Ohio Edison Plant

DRAVO Corporation, Pittsburgh, is supplying fabricated alloy steel piping for a new power plant on the Ohio river for Ohio Edison Company of Akron. The new facility is located at Stratton, Ohio.

The station will house four turbine generators, each rated at 170,000 KW. The turbines will be powered by boilers providing steam at a pressure of 2400 psi at 1050 degrees (F), and reheat at 1000 degrees (F).

Dravo's role in the construction includes the fabrication of all piping for Units 1 and 2, and the fabrication of main steam lines, hot and cold reheat and boiler feed lines for Units 3 and 4. Using chrome-moly steel, Dravo will fabricate the piping at its Marietta, Ohio shops.

Booklet Describes Arps New One-Man Trencher

THE Arps Corporation announces the publication of a 4-page catalog describing the new, one-man operated trencher . . . the Arps Trench-Devil, Model Jr. The compact new trencher is said to be ideal for gas or water line trenching, electric cable installations, telephone installations, lawn sprinkler systems, and similar light trenching jobs.

Easily transported and put into operation by one man, the Trench-Devil digs a trench 2½ in. wide and up to 20 in. deep. The booklet may be obtained by writing direct to Arps Corporation, New Holstein, Wisconsin.

West's Most Powerful Turbine-Generator Bound For PG&E

THE Westinghouse Electric Corporation is building a 3600-rpm turbine-generator for the Pacific Gas and Electric Company.

With a guaranteed capacity of 300,000 kilowatts, the unit is expected to generate up to 325,000 kilowatts; boosting by almost 50 per cent, the capacity of the PG&E's Pittsburg, Calif. power plant. The turbine-generator will go into service in 1960.

Weighing almost 1300 tons, the turbine-generator will operate at 1050 degrees F and 2400 psi. The unit will be installed outdoors.

Purchase of the Westinghouse turbine-generator is part of an expansion program to double the Pittsburg power plant's capacity, authorized last year by PG&E's Board of Directors.

Look Announces Award Winners Of Annual Adequate Wiring Competition

FOR "outstanding achievement in the promotion of adequate wiring," four members of the electrical industry have been named for top honors in the annual Adequate Wiring Awards competition conducted by *Look Magazine*. In addition to the trophy winners, two other members have been awarded Special Citation plaques, and eight have received Honorable Mention awards.

The *Look Adequate Wiring Awards*, known as the "Oscars" of the electrical industry, were presented to the 1958 winners on February 20th at the 14th Annual Conference of the National Wiring Bureau in Detroit.

The annual competition was inaugurated four years ago by *Look*. Each year the competition focuses attention on the successful efforts of industry members to solve the problem of inadequate wiring.

Winners of the 1958 Adequate Wiring trophies include two utility companies, an electrical contractor and an electrical distributor. The two utilities are:

Niagara Mohawk Power Corp., Albany, N. Y., Community Service Award for Utility Companies (over 250,000 meters).

Dayton Power and Light Co., Dayton, Ohio, Community Service Award for Utility Companies (under 250,000 meters).

Eight members of the industry received Honorable Mention plaques.

(Continued on page 30)

INDUSTRIAL PROGRESS—(Continued)

The following utilities are in this group:

(Utilities over 250,000 meters)

- Connecticut Light and Power Co., Hartford, Conn.
- Long Island Lighting Co., Mineola, N. Y.
- West Penn Power Co., Greensburg, Pa.

(Utilities under 250,000)

- Iowa Electric Light and Power Co., Cedar Rapids, Iowa
- Montana Power Co., Butte, Mont.
- United Illuminating Co., Bridgeport, Conn.

New Delta-Star Offices Opened

DELTA-STAR Electric Division, H. K. Porter Company, Inc., has opened a new office at 325 Chestnut street,

Philadelphia 6, Pa., with a staff headed by Ralph M. Bozarth and including Walter W. Dearolf and John Reifenger, all well known engineers in that district. Offices were also opened in Roanoke, Va. and Baltimore, Md., managed by Herbert O. Arnold and Norman E. Shipley respectively, who are also well known engineers in the East and Southeast.

Though these offices are newly opened, the name of Delta-Star has been recognized for many years through long-established sales representation in these states. Delta-Star has been providing quality high voltage equipment to the public utilities of the Delaware Valley region for fifty years. Products include complete made-to-order substation structures, all types of air switches and discon-

nects obtainable with thoroughly dependable interrupter devices, generator buses, distribution transformers, lightning arresters, insulators, connectors, and related equipment.

The new offices, staffed with engineers having utility field experience will be able to give better engineering service and personal attention to problems of the high voltage power industry because their interest will be the application and service of Delta-Star equipment only.

Transcontinental Gas Plans \$165,100,000 Expansion Program

TRANSCONTINENTAL Gas Pipeline Corporation, Houston, filed its applications recently with the Federal

(Continued on page 32)

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New Issue

250,000 Shares

Niagara Mohawk Power Corporation

Preferred Stock, 4.85% Series

(\$100 par value)

Price \$100 per share

(Plus accrued dividends, if any, from February 25, 1958)

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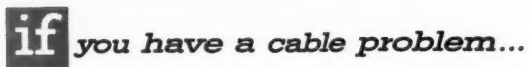
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INDUSTRIAL PROGRESS—(Continued)

Power Commission for authority to build \$165,100,000 of facilities.

Transcontinental said it wants to build 145 miles of pipeline laterals extending from its producing fields in Lafourche and Saint Charles Parishes, La., at a cost of \$14,100,000.

In another application, Transcontinental proposes to add \$3,000,000 of new facilities to several main line stations servicing Atlanta Gas Light Company, Atlanta, Ga.

The company also wants to build 566 miles of transmission line and other facilities at a cost of \$135,800,000 to connect new gas supply sources

in southern Louisiana, Texas and offshore Louisiana.

In a fourth application, Transcontinental joined with New York State Natural Gas Corp., Pittsburgh, and Texas Eastern Transmission Corp., Shreveport, to build storage pools at an initial cost of \$12,100,000.

Okonite Issues Booklet, "How to Choose Insulated Cable"

HINTS for electrical cable buyers on selecting the proper cable construction are contained in the new 20-page booklet, "How to Choose Insulated Cable," just released by The Okonite

Company, Passaic, New Jersey. In its easy-reading style it emphasizes importance of examining all the factors surrounding each installation to be sure of obtaining the right cable for the job.

Included is a typical check-list of the many technical points to be considered when preparing to specify electrical cable circuit. Cable users will find it a handy reminder of the information needed when considering a cable problem or discussing it with a cable manufacturer. Also pointed out is the part a cable manufacturer can and should play in assuring the performance of any cable purchase.

Copies of this booklet, a pocket-sized aid to cable-selection, may be obtained by requesting Bulletin 1 from The Okonite Company.

Ansonia Names Power Cable Specialist

APPOINTMENT of John L. Marsh as Marketing Specialist in the power utility field for The Ansonia Wire Cable Company was announced recently by A. J. W. Novak, the company's general sales manager. Since 1954, Mr. Marsh has been a sales engineer for the Ansonia company, New York and New England.

Designation of Mr. Marsh as power utility marketing specialist, according to General Sales Manager Novak, is in line with Ansonia's plans for diversification. Since moving to its completely modern new plant at Ashford, R. I. in 1956, the company has searched and developed Anso-Ankoseal plastic cable on such an extensive scale that "the time has come for marketing specialization in each of the specific markets we serve."

In his new capacity, Mr. Marsh will be based at the Rhode Island headquarters of Ansonia, described as "the oldest name in plastic cable in the most modern plant devoted entirely to producing plastic cables."

Niagara Mohawk's Generating Capability Nearly Three Million Kilowatts

IN 1957 the Niagara Mohawk Power Corporation made a greater investment in the growth of its business than in any previous year. Earle Machold, president, announced in the company's Annual Report. The company's additions to its electric generating facilities during the year increased investment in Upstate New York over a billion dollars.

This expansion program increases (Continued on page 34)

This is not an offer of these Securities for sale. The offer is made only by the Prospectus.

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369,694 Shares

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South Carolina Electric & Gas Company is offering to holders of its Common Stock the right to subscribe to additional shares of Common Stock on the basis of one share for each ten shares held of record on February 26, 1958, with additional subscription privileges, as set forth in the Prospectus. Warrants evidencing such rights will expire at 3:30 P.M., New York Time, on March 12, 1958.

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You get safety protection with a choice of lay-in bus-type or serrated strap terminals—both with positive ground. For the life of a meter, the rugged, weather-tight construction of the S-1 gives solid protection from severe weather conditions. The long-life dependability of this versatile 100-amp capacity socket provides real protection for your investment in meter accuracy. General Electric Company, Schenectady 5, N. Y.

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the System's electric generating capability to nearly three million kilowatts. Construction projects now underway will add another 600,000 kilowatts by the end of 1960. To expand its natural gas service, Niagara Mohawk constructed 200 miles of mains during 1957.

The report states that the number of electric customers served by Niagara Mohawk increased to a total of 1,073,000 and sales of electric energy in 1957 totaled 16.6 billion kilowatt-hours. Gas customers increased to 344,000 and the year's sales totaled 44.7 billion cubic feet.

Barber-Greene Increases Maximum Depth of "Runabout" Ditcher

BARBER-GREENE'S Model 705-B "Runabout" Ditcher, used throughout the United States and in many foreign countries by utilities suppliers, railroads, telephone companies, contractors and governmental bodies, now features a maximum digging depth of 56 inches.

This represents an increase of 8 inches in maximum digging depth over the former 48 inch maximum. The new longer boom will also cut the full

range of widths, 5½ inches, 7½ inches and 10½ inches, which the "Runabout" has featured since its introduction.

The "Runabout" with the longer boom, also features Barber-Greene's exclusive all-hydraulic finitely variable, crowding speed control, "Hydracrowd," a 15 m.p.h. speed, an optional hydraulically driven discharge conveyor, a comfortable weather operator's cab, a fluid coupling between power unit and drive mechanism and a special differential which aids traction on mud or ice feeding power to whichever drive wheel may be on firmer footing than the other.

Complete information on the "Runabout" may be obtained from a Barber-Greene distributor, or direct from either Barber-Greene Company, 400 N. Highland Ave., Aurora, Ill., Barber-Greene Canada Ltd., Barber-Greene Road, Don Mills, Ontario, Canada.

G-E Announces New Bulletin On Nuclear Fuel Elements

THE General Electric Atomic Power Equipment Department has announced a new bulletin describing department facilities for fabrication of nuclear fuel elements. The four-page illustrated bulletin, GEA-6762, describes the department's integral commercial facilities for design, development, fabrication and testing of both plate and rod-type nuclear fuel elements for all types of reactors. The bulletin includes photographs and drawings of fuel elements being produced and illustrated descriptive material on the production sequence.

New Appointments — Electrical Conductor Division, Kaiser Aluminum

SIX management appointments in the sales department of Kaiser Aluminum & Chemical Corporation's recently established Electrical Conductor Division have just been announced by G. Lette N. Houck, division sales manager.

They are, J. C. Ferguson, product manager; R. J. Harrison, assistant product manager; H. F. Johnson, administrative manager; and three program coordinators including J. A. Leuver, industrial, light and power; H. H. Weber, utilities; and P. W. Ward, distributors and warehouses.

The appointments, according to M. Houck, are in conjunction with the organization of the Electrical Conductor Division's new general sales office in Chicago.

This advertisement is neither an offer to sell nor a solicitation of offers to buy any of these securities. The offering is made only by the Prospectus.

NEW ISSUE

February 20, 1958

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ECO to Spend \$60,000,000 On Construction in 1958

TOMAC Electric Power Company expects to spend \$60,000,000 on construction this year, according to Roy Dunn, president. This is the largest outlay for a single year in the company's history. Bulk of the expenditure is for work on the new Dicker-Maryland, generating station and transmission facilities.

Iowa-Illinois Gas & Electric Orders 12,000-KVA Mobile Sub

A MOBILE substation rated 12,000 KVA, believed to be the largest to be built in the United States, has been ordered by the Iowa-Illinois Gas and Electric Company, Davenport, Iowa, from General Electric's Power Transmission Department.

The complete substation mounted on a semi-trailer for highway use, the unit will include a forced-oil-cooled three-phase transformer, rated 67,000/38,000 volts, high-voltage disconnect switch, low-voltage circuit breakers, lightning arresters, and control equipment. It will be used for planned main-

tenance of permanent substations throughout the I-IGE system and will be available to help maintain electric service in emergencies. It will conform to the Iowa and Illinois state highway regulations for dimensions and weight and will actually weigh less than the highest rated complete mobile substation General Electric has shipped to date—a 9,000 KVA unit weighing 55,500 pounds. The company also has under construction a 9500 KVA unit.

Space Heating School Conducted by Ebasco Services Inc.

HEATING specialists and sales managers from 14 utility companies spent the week of January 27-31 in New York learning more about the market for electric space heating, how to calculate electrical space heating requirements and how to get more heating load on their company's lines. The space heating school was held by Ebasco Services Incorporated's Sales & Public Relations Dept. for its utility client companies.

Instructors from Ebasco and some

of the leading manufacturers of electric space heating equipment discussed basic heating terms and definitions, fundamental principles of heating, how to calculate heat losses, design and operating principles of heating equipment on the market today, training salesmen, working with allies, using promotional materials and how to beat competition.

Alabama Power Awards Contract for Weiss Dam Hydraulic Turbines to A-C

THE second hydraulic turbine award in the last six weeks has been made by the Alabama Power Company to Allis-Chalmers Manufacturing Company.

The latest award calls for two 39,100-hp, 49-ft head, 90-rpm units with fixed blade propeller runners for Weiss Dam to be located on the Coosa River. The units will be designed for concrete scroll case settings.

In January, Alabama Power Company awarded the contract for a 111,500-hp, 210-ft head, 138.5-rpm Francis runner type hydraulic turbine for its Warrior River Project near Jasper, Alabama, to Allis-Chalmers.

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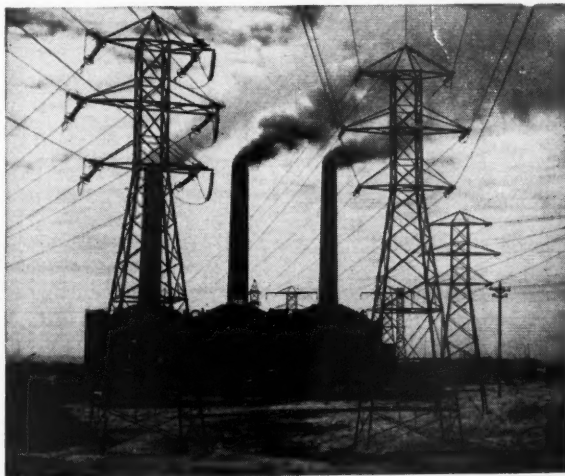
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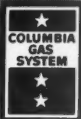
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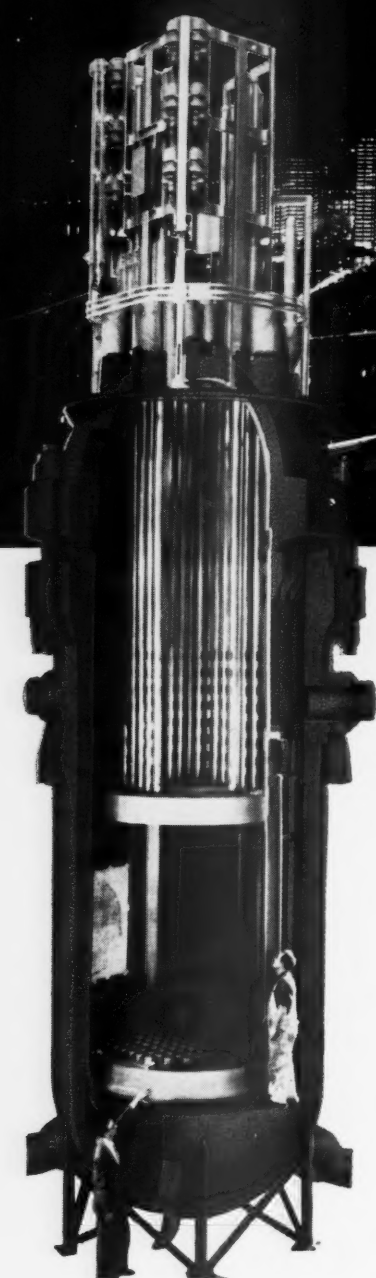


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Combustion Engineering was one of Shippingport's major suppliers. Its contribution: the heaviest unit of atomic power equipment ever built—the 235-ton reactor vessel—depicted by the colored areas in the picture opposite. This mammoth container houses the nuclear fuel charge within 8½-inch steel walls. More than 3½ tons of water pass through the vessel every second—at pressures of about 2,000 pounds per square inch—to cool off the tremendous heat generated by the nuclear reaction. Though it stands over three stories high, many of its massive parts were machine-machined to watchmakers' tolerances. Entirely new fabrication and inspection techniques had to be developed to make such precision possible.

Combustion's activity in the field of nuclear power has ranged from such civilian projects as Shippingport and the Fast Breeder Reactor for the Enrico Fermi Plant* to the design and manufacture of a complete submarine reactor system and numerous components for our Navy. C-E's highly specialized personnel and extensive facilities for nuclear work will enable the Company to occupy as important a place in the future use of atomic fuels as it has long held in the field of conventional power generation.

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